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## SOVIET RUSSIA

## THE SECRET OF HER SUCCESSES

Edited by

## K. S HIRLEKAR

Author of

The Place of Film in National Planning

Foreword by

The Rt. Hon'ble M. R. Jayakar
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to

## FOREWORD.

The herore part played by the Russian people in the present conflict and the stupendous and almost unbelievable sacrifices made by them in resisting the mightiest aggression of the present age have created in India a deaire to know all about the USSR and its achievements. People wonder how a country, which, before the present war, was looked upon in many quarters with suspicion and misgivings, could acquit itself, so valuatily in a fight which has taxed to the utmost even the resources of the British Empire. People are anxious to know the secret of this mystery and, in that sense, the present appears to be an appropriate time for the appearance of a treatise like the present one.

The book is a collection of articles by authoritative writers who sub-tantiate their statements by simple and convincing statistical data conveniently collected in a series of appendices. Mr Hirlekar's skill lies in making a judicious selection of these articles, so as to throw clear light on many important directions of Soviet Russia's colosial efforts to put the country in the vanguard of social, political and cultural progress. The book affords a hird's review of the revolutionary changes effected ance 1928, when the USSR began to plan for the future. During this short period, most profound and far reaching changes in the economic, political and social life of the Russian people have been effected. The skill and intensity of this revolution have been more striking than anything witnessed elsewhere. As an observer remarked after seeing the Soviet parking in the New York World Fair.

of 1939, demonstrating the all round progress made in Russia's national life, "Well, it just can't be true."

The story of this revolution as as interesting as at 15 miraculous There is hardly any department of human activity which has been left untouched by the Russian people's attempt to raise themselves. It is a triumph of planning, a lesson and a model lor all backward countries like India The lesson for India is obvious. There is a strong family resemblance between present day India and Tsarist Russia in the misery, figuorance and poverty of the masses and in the contrast between the rich and the poor. In Tsaust time, speaking only of agriculture the most important department of human activity in India the Russian peasants were poor, starved, illiterate and superstitious. The bulk of the land belonged to the Tsariet family, the monasteries and the landlords A large number of peasants had no houses no implements and their ploughs and harrows were wooden. Today the Soviet farmer leads the world in large wale mechanised agriculture. Similar achievements have been made in industry, the development of internal resources communications labour, education and other departments of human activity. All the nations and races of the USSR arrespective of their past and present condition and irrespective of their numbers enjoy full and equal rights in all spheres of economic, public, political and cultural activity. Any direct or indirect restriction of the rights or the establishment of direct or indirect privileges for citizens account of their race or nationality or are advocacy of

or national exclusiveness or hatted and contempt is cerely punished by the laws of Russia. The result is that large number of nationalities, once warring with one other for mutual destruction, now live in peaceful relationjite differences of race language, creed and civilizationhaps the most interesting feature of this, development is that it is all the result of the people's own planning under purposeful central direction without the help of foreign credit or of foreign talent

The Soviet Union as is now commonly known consists of 16 constituents, the Soviet Socialist Republics Wost of these include numerous autonomous units or smaller republics Racial and national hostility which was conspicuous at one time has now been adjusted within the framework of the Soviet Union Each national group has every facility for developing its own culture Rapid industrial growth has emancipated Russia from foreign dependence and added im mensely to its power of resistance to foreign aggression. The spectre of unemployment has been laid. There is no economic crisis in existence or in apprehension. Illiteracy the frightful spectre of our times has been killed and its place taken by an enormous growth of schools universities and institutes, in all of which education is imparted free of charge. Soviet college students receive government stipends and immediately upon graduation secure employment in their speciality. As an American author remarks Imagine a Russian falling asleen twenty years ago and waking up today. He could not have recognized his country his city or even his own lioine ' An intensive unified construction programme has altered the old cities and created new ones Perhaps the most remarkable achievement is that Soviet explorers scientists seamen and aviators have converted the Arctic region into a navigable seaway and are making immense areas within the Arctic circle liahitable

All this progress has been achieved in a country the dimensions of which are incomparably bigger than our own Russia has the largest/continuous territor; in the whole world and occupies one with of the earth sourface. With an area of

2,173,550 sq miles It so nearly three times as large as the United States, ninety times as much as England It stretches from the Artice Circle to Afghamstan and from Poland to the Pacific Ocean, one end is only 45 miles from Alaska and another only nine miles from India One short hop in an aeroplane from Glight will land the traveller on Russian soul in a few finither.

The period occupied by this mighty revolution is comparatuely brief. It began only in 1917 and is the outcome of three plans each durable for five years. At their end, the people have become the masters of the riches of the country, whose industrial output they have advanced to a first place in Europe and second m the world, second only to the United States They have also become masters of their own lives-They have ended exploitation of man by man. They have eliminated class privileges. They have achieved economic security and political equality. They have brought about a great advance in science and culture. Crises poserty, unem plox ment and destitution have disappeared. The First Five Year plan started in Q929 and was completed early in 1932, a year thead of the schedule. It enabled the U.SSR to build a powerful industry to make the country industrially independent and well equipped for defence Agriculture became a collective modern enterprise conducted on the largest scale in the world It laid the economic foundations of a socialistic society Second Plan was completed in 1937 It eliminated all exploit ing classes and abolished the causes for the exploitation of man' by man As a result Russian society now consists of two classes. friendly to each other, the workers and the peasants, united in a common cause. The line of demarcation between the twoclasses of the working people is becoming obliterated, as is also the line between them and the intelligentsia, who are engaged in mental labour for the benefit of the Soviet society.

The Third Fave Year Plan, 1938-42, laid the foundations for the completion of hight industries and for the organization of transport, communication and defence of the country against internal ergis and external aggreession.

From India's point of view, perhaps the most remarkable feature of the Russian constitution is, as stated above, the 16 constituents, each of which is a federation of numerous autono mous units-autonomous republics, districts and regions of the many peoples of the Soviet Union By an extraordinary experi ment in unification, they have been brought together and the antagonism, at one time observable amongst them has been laid at rest. They are now working in friendly union proud of the fact that they are all Russians and belong to Russia Each constituent Republic is free to secode from the Union, but none has chosen to do so All activities are conducted in the native language of the Republic Racial and national hosti lity has been abolished and the law severely punishes any one guilty of fomenting racial animosity and discrimination Women have equal rights with men in all spheres of lifeeconomic, social, political and cultural. They are guaranteed full equality in work, payment for work, rest and leisure, social insurance and education and the right to vote and to be elected to office All these achievements have been effected within twenty years, which is about the same priod as the Gandhian movement had India at its feet and one tenth of the period during which the British Government have had India in their control

The question naturally arises how has this miracle been made possible? Is India ripe and free to receive the message of Russia? The air in India is full of plans of reconstruction, even Government is moving, though in a chaotic and bewildered manner. People of unquestionable solvinety and sanity are pushing forward plans which, before the war, would have been spiffed at as fantastic and visionary How did Russia achieve this imracle? Can we not do something similar? These questions every intelligent Indian is asking himself There is hardly any department of human activity which has not been invaded by this currouty. A short foreword like this cannot attempt to answer these questions, except briefly to say that in Russia the people met left their differences aside and planned for the future. Are we willing and free to do likewise? This is the crux of the question. In attempt m- its solution it may be of some help to know what an eminent American's estimate is of such achievements. 'We did net of tem freedom by requesting it on a postcard and receiving it on an engraved certificate. We fought for it" That is the recipe which enables the Russian to say to the world "We are proud of our achievements and success. We face our future with confidence building a peaceful life in friendly cooperation with other people. We are not afraid of any aggressive plans, from whatever quarters they may come "

Mr. Hulekar's book contains a detailed description of this miracle. It should prove interesting especially to young Indians. The statistics which the book supplies will furnish attained the statistics which the book supplies will furnish four national activities. Wors of the figures are tell tale. There is no space to recall them in this foreword. But it must always be interesting to a young Indian to note the ways and means by which one hundred and seventy million people, teld back by centuries of oppression have further up a new joyous life. We should all feel grateful to Mr. Hirlekar for the troulle he has taken to unfold the secret of this mystery in a handy book cavila variable to us all He is most fitted to do it by reasons of his tracels life long interest and actual carticipation in the in lustralisation of India. I am luppy

to say that he has turned his knowledge and experience to good account I wish him all success. The book will be parti cularly useful in enlivening us in these days of universal frustration that is rapidly approaching its climax Anos M R JAYAKAR

" Ashram." Malabar Hill,

Bombay

February 18, 1944

## INTRODUCTION

While I was visiting the West for the study of certain problems in which I was interested and for collecting neces sary material thereon, my curiosity was aroused by the industrialisation of the Soviet Russia. I therefore tried to visit the country twice, once in 1925 and then again in 1939, but both the times I was refused the visa on my passports by the Soviet authorities apparently because I wanted to visit their country as a student of current affairs and had not any party label attached to me I was, therefore, forced to abandon the idea of the visit and satisfy my curiosity by collecting reliable information on the Soviet industrialisation from all available sources from outside that country, and I succeeded to a great extent in my efforts in that direction Now recently I have been associated with an institution devoted to the rapid industriali sation of India and the work of the planning and post war reconstruction problems This made me once again go through the material I had gathered during those two visits to Europe and America I found the information very useful and brought it to the notice of leading personalities in Bombay keenly interested in the industrial and agricultural develop ment of our country When I found wide appreciation of this information about the Soviet Russia, I thought it advisable to edit the material and add to it some facts and figures to bring the story up to date for the information of the people of our country who would like to henefit from the experience of others

While in USA, I visited the Soviet Pavilion at the New York World Fair in July 1939 The visit was an education in itself. Here is what an American writes and I am entirely in agreement with him -

If you are one of the pravileged persons who has had the good fortune to visit the Soviet Union you have indeed seen the future and seen it work. Pethaps you have had a glimpse of the achievements of the Soviet Union at the magnificent Pavilion at the New York World Fair. In either event, your eyes have opened on a new world, a world covering a sixth of the earth's surface, where 170 500 000 people, held back by centuries of Tsaint oppression, are building a new, joyous life.<sup>39</sup>

Here is what another American said about the Pavilion which is very interesting

"Well, it just can't be true But it is true And I can testify that those detailed and graphic exhibits in the Soviet building correspond very closely to what I myself saw in the Soviet Union only a year ago"

The viet to the Paulion was so interesting and instructive that one could get a <u>better idea</u> of the U.S. S.R. from the Fair exhibits than from ten years study of books and newspapers. The visitor could feel that he was actually moving in that sast country, breathing the misgorating atmosphere, and seeing the mighty achievements that Soviet Russia had to her credit, during the brief period of the past twenty years.

Considering the vast extent of the lands of the U.S.S.R. it is difficult for a student of Rusvain problems to study them even by a visit to the country. This exhibition had, therefore, the particular advantage of presenting with facts, figure-charts models etc. the various aspects of the Russian experiment in a nutshell and thus focusing the attention of the

student on problems which would, otherwise, have missed the notice of the visitor to the country Hence, the book opens with a chapter on "U.S.S.R. in Miniature"

Some of the material written in 1959 by the authorities an their respective subjects in Soviet Russia for the visitors of the Soviet Pavilion is an print abroad and I have, therefore, taken every care to sort out and present it from the proper perspective and from the Indian point of view By the addition of other material gathered from the files of the daily news paper the Moscow News " and from the Soviet Russia To day" and others I have tried to bring it up to date as far as possible. In domg this no efforts have been spared and even the question of expense had during the several months' work on the book, never acted as a brake on them In the collection of the material, a visit to Delhi proved fruitful and a journey to Kabul the seat of Soviet legation and cultural organisation, was projected for the same purpose but passport difficulties were again a great handicap and it had, therefore, to be abandoned. Hence I would consider the object of this publication served if it gives an ineight into the eccrets of the economical and cultural development under the Soviets to which are due the colossal Russian successes in this war

The most straking feature of the reconstruction of the Russian Nation after the last World War when she had just emerged out of her internal troubles—the revolution and the civil war—was the tacking of the problem of education of the masses an all its aspects. For the founders of the new regime were perfectly aware of the fact that no progress could be possible or sustained on a permanent basis unless the lowest strata of the population intelligently followed the events and participated in the development and reconstruction programmes of the nation. Hence, Iquidution of illitracy, was the first

and foremost item in their plan Within a span of two decades the percentage of literacy shot up from about 29% to 82%

Realising that a high percentage of literacy was not the only and the true index of the progress of education, the spread of higher-education on a large scale in art, science-commerce and industry was simultaneously planned and general higher education was imparted. This seducation drive was on all fronts and was not restricted to only boys and girls but sleg-to-adults heath-men and women in industry, agriculture and in other technical as well as non technical spheres without any discrimination of caste and creed. This is amply revealed by the figures given in the appendices.

The industrialisation of the country was another big personned to the property of the Soviet As a preliminary to this, a geological survey of the vast stretch of Isrid was made by organising hundreds of expeditions of scientists, professors, students and industrial experts to find out the natural resources and the industrial possibilities out of the raw material for which they need not look to any other country. This survey work is ville continuing in spite of distractions and bloodiest

gole that is raging on the Russian soil nearly for the last vears. The survey so far made has revealed that Russia the richest country in the world in natural wealth, the on of the Urals alone containing 200 minerals and 12,000. ', its

The geological survey was accompanied by industrialisaion on an unheard of scale. The construction of <u>electrical</u> <u>piver</u> stations all over the country was undertaken which elped the growth of heavy and basic industries such as iron and steel, non-ferrous metals, machine buildings, chemical industry, automobiles agricultural machinery, paper etc. Thgagante development of electric power stations will be clear from the fact that the electric power production rose from 19 in 1913 to 39 6 billion K.W. Hrs and the industrial production from 100% in 1913 to 908% in 1938. How the face of industrially backward Tsarret Russia was completely changed can be seen from the table given on page 30 and from the appendix I relating to National Growth resulting from Five Year Plans. Today the successes on battlefields have convinced even the one time critics of Soviet Russia that the is one of the leading industrial countries of the world perhaps second to USA.

Between 1917 and 1921 there was no stable Government as the Revolution was followed by the Curil War and foreign intervention and the country had therefore to go through political chase, and densetation. It took about seven year (1921 28) for the Soviet Government to raise this production to the pre-war (1913) level and to recover from the effect of 1914 18 war and subsequent upheavals

The First Free Year Plan, was put into operation, in 1923 but due to the nation wide drave behind it practically material and within four years. The Second Five Year Plan was in taited in 1923 and the Third in 1933 which completed only three years when the present conflict between Russia and Germany started. Thus the real achievements, in conomic, muturnal agricultural educational and social spheres were the noise, of the three Fire Year Plans spread over a period of thirteen years only. The statistics (side appendices) will give abundant evidence of the truth of this statement.

It is clear from the stati ties of industrial output that the land of the Soviets had increased its production more than nine times within the period of the two Five Year Plans. In this connection it is interesting to note that England and

France required a span of 30 years (1860 to 1938) to increase their respective industrial production not more than three or four times while the new country of the United States regretered twenty fold increase in half a century (1880 to 1929)—a rate of progress for which Germany tool. 80 years (1860 to 1932).

The mechanisation of agriculture in Soviet Russia demon strated by facts and figures in the third part of this book and the statistics appended is unique and unrivalled in the history of the world.

In 1913 Russia stood fifth in the world in the production of actricultural machines and in 1937 she was second facilie.

United States — The manufacture of irractors and liarnestor combines did not exist at all in pre-world war period while in 1937 he stood second and first in the respective production of these machines in the world. Collectivisation of farm introduction and innovation of science and scientific methods in increasing the agricultural produce and Investock breeding to the highest possible patch are some of the main factors which raised the standard of living of the peasants and enabled to a certain extent to pas for the capital goods and machiners she had to import at the beginning. The credit therefore goes

holls to the Government of Soviet Russia for being the first in the field to industrialise agriculture (in a usu coale and according to a well thought our plan of development. Ample facts and figures given in the chapter dealing with the various aspects of agriculture and the tables given elevation in the book corroborate this statement and bring home to the reader the importance of the planning enforced 1. Societ Russia or a vast and gigantic scale not only in agriculture but also in industrial and other spheres. This is really the secret of the colo al strength amply descriptions are the present war

There is a great resembliance between the conditions prevalue of the condition of the Con

If this book creates a spirit of inquiry and carnest desireto learn more about Russia by first hand knowledge than through books written by foreigners with selfish motives from different perspectives one of the purpose of this book can be considered as achieved. More contact with the Soviet Russia, a neighbouring country so much industrially advanced in an amazingly short period of about twenty one years would be profitable in the reconstruction of post war India Few people realise that only a hop, by acroplane over Gilgit (Kashmir) will without the necessity of crossing any other foreign country bring you in the land of the Soviets A perusal of the book it is hoped will forcibly suggest to the powers that bein our Universities the immediate necessity of atranging a cultural exchange of professors and scholars with the Soviet In our educational curriculum the study of Russian may well occupy the same position as that of the French and German languages Russians have been great Indologists themselves and in the cultural exchange suggested

above India will discover herself as no mean contributor and thus recognise her true self rising to her fullest and most imposing stature.

It is expected that this publication will be an incentive to probe into the secrets of the Russian successes, which has amized the mankind of the world and won admiration for the Soviets from all quarters. Further, it will be a useful guide to all those who are seriously engaged in the post war reconstruction problems and rapid industrialisation of our country.

In spite of every care, drawbacks and shortcomings in respect of uniformity in maintaining either English or American mode of spelling and misprints, would be only visible to a careful reader. It should be borne in mind that the satisfies are written by various authors and I am aware of the somewhat undue repetition and overlapping during its first three chapters and the real unfolding of the main topie of the book begins with the fourth chapter. If there is not found natural flow of language or expression the original translations are responsible and the reader is kindly requested to be indulgent towards such shortcomings. Any suggestions that could be made use of in subsequent editions would be welcame.

While editing this book I received valuable suggestions help from my friends interested in the question of National lanning and I may particularly mention the names of Mr. Haji, BA (Oxon), Bar at Law and Mr. G. B. Iathar.

(Retd.), Principal, Khalsa College, Matinga and Mr. J.
D'Souza of the Free Press Journal. I have to thank Mr. P.
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lin, who kndly loaned me one of the most valuable publions on Sosiet Russia—"An album illustrating the State

Organisation and National Economy of the USSR", published by the Scientific Publishing Institute of Protorial Statistics I have also to thank Mr V R Bhadkamkar who kindly supplied the paper for publishing this book. The credit for the design of the cover page and preparation of the four maps incorporated in the book goes to UrS N Kamat of the Commercial Section of Sir J J School of Art, Bombay.

I should not fail to express my gratitude to Mr M L Dahamukar, President Maharashira Chamber of Commerce, whom I net incidentally at Geneva when he pressed me to accompany him to visit the New York World Fair, while I had planned to visit some other countries of Europe And the book is the outcome of this visit

Vy thanks are particularly due to the Rt Hon'ble M R Apakar who inspite of his modifarious activities, readily accepted to write a foreword to this book and thus to appreciate my modest effort at bringing a knowledge of Soviet successes in National Planning within easy reach of our people

Vindavan" Dadar, Bombay 14, 11th February 191€ K S HIRLEKAR

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## U.S.S.R. IN MINIATURE

I. Double that of Pans Exhibition 2 It is not propaganda 3 Ready to meet agression 4 What it contained 5 Abolition of illiteracy 6 Science

All one could say about the Sovet Pavilion at the New York World's Fair, deducated to "The World of Tomorrow, on 17th May 1939 is that it would have knocked your eye out At the Paris Exposition in 1936 the Soviet exhibits practically overwhelmed their competitors and very much the same thing happened on Flushing Meadow (New York). The structure was far superior to what the Russians had at Paris and it was miles beyond anything at New York.

"When I was in Moscow several years ago, f thought I had a notion of what these fabulous people could do but this World a Fair business beats everything", wrote Robert Foretythe in the magazine Soviet Russia To day', of New lork The ordinary building at a Pair was made of papier mache, aspestos and strav bits of baling wire, but these exalted Moscovites had transported a gigantic marble and stone structure from the banks of the Moscow to the rim of Flushing Creek most of it had come by way of the Northern Passage through the Arctic Circle They worked the whole plan out in the Soriet Union, assembled the material, marked it, shipped it and then put it back together when it reached America Talk about organization, foresight and work manship! There wasn't anything on the grounds that exceeded it and this referred even to such exhibits as the great industrial shows of American firms

In the centre of the court of the Soviet pavilion formed by its wings rose a pylon topped by the figure of a worker bearing idot a ruby star. The over all height of the pylon and the statine was 259 feet. The star was a replica of the five pointed stars on the Kremlin. The shaft of the pylon was of per phyry a soft rose color below merging into a rich deep though the star of the star of the transition of the sover the star of the transition of the sover and the star of the USSR wrought in granite. The statine which was the work of the Soviet scolptor Viache-lay Andreeve was of stainless steel. This simple strong figure of a worker so confidently stricking forward embodied the whole meaning of the Pavilion the is a young man and represents the new type of human being capable of both physical and mental labor produced by Soviet sculats epoch.

The Societ Partition at the New York World & Fair and more than twice as large as the Pasistion at the Paris Fair in 1937. This made it possible for the Societs to give a picture of the economy and culture of the peoples of the land of socialism to show what had been accomplished during the Stalinist Free Year Plans and to explain the structure of the Societ society and Government.

Returning from a visit to the Soviet Union more than a cade ago Lincoln Steffens said. I we seen the Future—d it works. Nescribeless it has taken years for his llow countryn en Americans the victims of vicious proaganda to rise above prejudice to overcome fear and to dd in a somately at the Soviet Union to see how a grat optle like ourselves (Americans) throwing off the yoke of pression emerging from revolution and civil war are working out their detuny in the World of Tomorrow.

The art the ingenuity the skill with which each exhibit had been conceived designed and executed was surprising

even to the visitor who had been to the Soviet Union within recent years, and had endeavoured to follow its dazzling development.

"2 The massive model, of semi-precious stones of the "Palace of the Soviets," the large animated maps of the USSR, its highways its cuties and its collective farms the three dimension action models of the wast canal and power systems, the ingenious reproduction, in actual size, of a section of one of the subway tations in the palatial Moscow Subway, the illusion of the tubes with approaching and disappearing tracks, these nere a few of the extraordinary crimbits in the Soviet Pavilion, which, to those who came to cooff, would be "wooderful propaganda". But many who came to cooff left with a feeling that they had seen into the Future, and honesty would compel them to say. 'It seems to work!"

The palpable and imposing form in which the factsimmense natural resources of Russia and the social uses to which they were put—alone had much to open the eyes and the mind of every visitor and to dispel the for of misunderstanding, and prejudice through which he was accustomed to look at Soviet Russia.

Even in this greet World's Fair, remarkable for the beauty, variety and architectural excellence of its foreign partitions, the Source Partiens stood a monumental example of labor as "a matter of honor, a matter of glory, dramatic, stimulating, exciting

At the dedication ceremony, Commissioner Herman Tikhomitmov, representing the Soutet Government, declared that in the land of socialism "each citizen looks ahead with confidence, for he knows that the Stalin Constitution guaran

tees him work, education, lessure, and security in illness and old age"

3 'We show you the reality of life in the Soviet-Union' continued Mr Thkhomirnor "We are proud of our achievements and success, we face our future with confidence building a peaceful life in friendly co-operation with other peoples, we do rot fear any aggressive plans, from whatever quarter they may come "After going through the Pavilion you may become acquainted with the life of the Union of Soviet Socialist Republies with the life of the 170 million people of our great fatherland

On behalf of the United States Government, Edward J Flynn, United States Commissioner General, while paying tribute to the Soviet Union fot her accomplishments, remarked This Pavilion stands as something of a monument to your technical accomplishments of the past two decades, and as a reminder of the great strates that have been taken towards industrialization of the Soviet Union during that period."

In the dedication ceremony, La Guardia Mayor of New pand the highest compliment and said. The Soriethitests deserve the highest praise for the beautiful continuo and design of this huilding. I believe that in your hibition here the opportunity will well present itself to ow to the American people what has been accomplished a young Government in an old country.

After all our own country our own concept of governwas the result of a bloody revolution. We did not tain freedom by requesting at on a post card and receiving on an engraved certificate. We fought for it. And you now, Mr. Ambassador, our young republic was not so very opular with the dynasties of Europe at the time."

## Coming to the description of the Pavilion

4 In the entrance Lobby of the Pavilion a large jewel imp (on a wall) lettered with diamonds rubies and other stones, showed the industrial expansions of the Soviet Union occupying one sixth of the earth's surface, during the past decade covered by the First and Second Five Year Plans of socialist construction

The exhibits in the Hall of Socialist Economy and Labor traced the constant growth of planned occialist induction which has never had, and by its nature precluded economicries and unemployment and which had won first place in Europe, and econd in the world in volume of output

The industrial section depicted the growth of Socialist industry to a point where it produced mine times as much as the industry of Tairist Russia Here it could be seen that in the total production of large scale industry the Societ Union holds first place in Europe, and second only to the United States in the world line up

The abolition of unemployment and new methods of lator iStahhnooite methods; have assured the growth of the national economy and have made labor in the Soutet Union, as Stalin put it 'a matter of honor glory, valour, and heroism"

The changes in the country-side were shown by a dioramy of similar proportions and ingenuity A rural district appears as it was in pie recolutionary times. The land was fenced into tim farms tilled with wooden plouchs. There were the old village with its draggled streets its single-brightly lit building the calcon. The landlord's manion stood splendid and aloof.

Then all this disappeared A large collective farm energies, worked with tractors and combines A modern kindergarten had replaced the saloon. The landford's manison had been converted into a smallorium for the kolkhozniki (Collective farmers).

In the section Transportation and Electric Power "
it was strikingly demonstrated amongst other exhibits how
the man who not so long ago pushed a wooden plough now
flew on an aeronlane over the Panurs

The Hall of Culture and Rest illustrated beautifully the health work of the nation. One saw pictures of health centres and heard that there were 26 927 such centres serving, the people. One saw models of sanatoria where workers rested on the seashore or on the mountains. One saw that the number of medical schools had increased from 13, in 1913 to 71 in 1937 that 107 000 students were enrolled in these schools and that the number of doctors had increased from 20 000 to 132 000. The budgets had reached enormous figures. 10 3 billion rubles for health 6 8 billion for social insurance.

In the Hall of Culture and Lessure one exhibit con tained models of airplanes and ships made by the Soviet children who held four out of the \*ix world records for airplane model builders

5 One section in this hall told the dramatic story of the abolition of inliteracy and the enormous growth of schools universities and institutes in all of which education was imported free of charge. Soviet college students receive Government stipends and immediately upon graduation are certain of employment in their speciality. The section of Socialist City Planning was very impressive Imagine a Russian falling asleep twenty years ago and waking up today. He could not have recognized his country. his city or even his own home. An extensive unified construction program had altered old cities and created new ones.

Other exhibits show how this vast rebuilding and creation of urban centres is integrated with the planned conomic development of the USSR They tell how slums have been abolished how proportions are maintained between industrial and residential ections and how the daily life of the people has been altered by large building projects including new homes nurseries schools universities institutes theatres cinemas and sport stadiums.

( In the Hall of Science Literature and the Press an exhibit describing the activities of the Academy of Sciences the highest scientific body in the USSR shows the close interdependence between research and the economic developing on the first present of the country whose natural resources are explored whose soil is made more fettile and whose people are made health er with the aid of the Soviet scientists.

In it e book section one gathered it e impression that a tillage t hich possessed a library was a rarity in Transt Russia. A tillage suthout a library is a earity in the U.S.R. Of part cultre interest among the children's books was one describing ho to make models of too, aeroplanes subtarner etc. Thich ran to a printing of several hundred thousands.

The Societ Parision of the Arctic demonstrated how Soviet explorers scientists seamen aviators and workers have converted the Arctic into a navigable seaway, and are making immense areas within the Arctic Circle habitable

Coming down the steps of the beautiful Soviet Pavilion, a visitor remarked to his friend "Well, it just con't be true But it is true And I can testify that those detailed and graphic exhibits in the Soviet building correspond very closely to what I myself saw in the Soviet Union only a year ago From it one could get an idea of the new Soviet Russat that one could not have soft from a dozen books, or

a thousand newspapers

## MODERN RUSSIA AT A GLANCE

1 Land of Riches 2 Social progress 3 Planned commony 4 Democracy 5 Large scale agriculture 6 Irdu try—first in Europ- 7 Economically inde rendent 8 New Cities 9 Care of Expectant mothers to Literacy

What used to be called Russaa is today called the Union of Soviet Socialist Republics. It has the largest continuous territory in the world it occupies one sixth of the earth 5 surface and has an area of 8 173 550 square nules. It is nearly three times as large as England. It stretches from the Aretic Circle to Alghamstan troin Poland to the Pacific Ocean. One cid is only fifty five miles from Alasla an other only nine miles from India. Its population of 170 167 186 is the third directs in the world.

The Soviet Union has every type of climate from the Arthe climate of the north to the temperate and subtropical climate of the south. Its animals vary from polar bear to tizer its plants from Arthe moes to citrus fruits tea and cotton. Between these extremes he wast fertile plants long tivers lofty mountums. Lands rich in natural resources teeming cities industrial centers prosperous kolhozes (collective faturs). Land of Great Channee.

By man's deliferate will the entire country has been changed once the great Octoler Secretive Resolution of 1917. The people have Lecome the masters of the riches of the country, whose industrial output they have advanced to first place in Europe and second in the world second only to

the United States They have become masters of their own lives They have ended exploitation of man by man. They have eliminated class principes. They have achieved economic security economic and political equality they have brought about a great advance in scenece and culture Crisesportity unemployment and destitution have disappeared

With the transformation of the social order the very face of the land has been changed. The new rulers of the land the people themselves have transformed Russia from a place of stagnation and decay to a place of surging growth and progress in every field New gigantic industries, unknown in the old Pussia have been created. Old cities have been reconstructed and 230 new cities have been built Modern towns now rise above the scy wastes of the Arctic, the taigas of Siberia the deserts of Central Asia Cotton now blooms in former wastelands of Central Asia and even as far north as the Ukraine Through new varieties originated by Soviet scientists wheat and segetables now grow within the Arctic Circle Moscow is no longer an inland capital canals unite it with the open sea. In remote regions like Karaganda in the Kazakh steppes and Kuznetsk in Siberia, the earth has been made to yield vast new stores of minerals Aviation has conquered time and space bringing the peoples of this extensive land closer to each other and to the world

Vast areas have been explored and added to the map the greatest enlargement of the habitable earth since the scovers of the Americas and Australia. The Arctic terri

covery of the Americas and Australia. The Arctic terri ) now being developed has an area equal to the European part of the IISSE

For the first time and on the largest scale in history, e Soviet Union is harnessing the forces of nature by tentific planning for the service of all

By man's deliberate will man himself has been changed. A great people held back by centuries of Tsarist oppression now stand in the front rank of modern civilization.

I In the Soviet Union the rapid development of knowledge and of economic power go hand in hand. Yearly scientific expeditions have discovered that the country a natural resources exceed all pressous estimates

Exen today, the LSSR is far from having been completely explored and the data already accumulated shous that it occupies the first place among the countries of the world in deposits of oil tron ore phosphate potassium salts, man sunese ore, peat gold and platinum, and second place in coal deposits By 1934 all the elements known to man had been discovered within the country.

Oil deposits in Tsatist Russia were calculated at about 850,000,000 tons. B. 1937, new findings under the Soviet Government had brought the figure for geographical deposits up to 6,376,000,000 tons. The proved oil deposits up to 6,376,000,000 tons. The proved oil deposits are 3,877,000,000 tons, or 55 per cent of the worlds proved deposits. Dozens of new oil fields have been discovered and put into exploitation in Azerbaidjan, Grozin the Maikop Regioti, Dagestan, Emba, Bashkaria the Volga region, the Ukraine. Central Axia and the Perm district.

According to the latest data the USSR has practically as much tron ore underground as the rest of the world put tocether. Its deposits of polarsame salts supplying chemical festilizers for agriculture are five times as great as the world supplies outside the Soviet Umon. Supplies of apatite at khibin are practically inexhaustible. The Ural mountains are fabulously rich in nunerials and precious stones, and undersamed of wealth is being located and procured in the once

blank spaces of the Arctic, the high Pamirs, Siberia, the Kara Kum desert and the Tien Shan Mountains

Until 1917, most of this great wealth lay locked in the catche undiscovered and unused. But the Soviet Government are unlosed the mighty producture resources of the land, its rich earth and rivers and forests its iron and coal and precious minerals and utilized them throughout Soviet industry and agriculture to raise the lung standards of the benoile

As regards rate of growth, the socialist industry holds first place in the world Compared with 1913 Societ industry has grown 908 8 per cent

The natural resources of the USSR are vast enough to insure steady progress in the country's economic development for an indefinite time

2 The Soviet State came into being in November 1917 (October old style) as a result of the socialist recolution of the working class in alliance with the poor peasants, headed by the Bolsheuk Party and its great leaders, Lenin and Stalin

All power in the USSR belongs to the toilers of town and country as represented by the Soviets of Working Prople's Deputies The land, the waters mineral deposits, forests, mills factories railways, water and air transportation, credit and banking metitutions means of communication state.

ms machine and tractor stations, the housing in the urban nd industrial centers are the property of the whole people

Under training ten per cent of the population—capitals landlords and rich peasants—received eighty per cent of a national income. In the USSR the whole of the usual income goes for the benefit of the whole people 134 9097 per cent of the output of all Soviet industry.

is produced on a socialist basis, and 99.4 per cent of the grun acreage is caltivated by <u>kolhozes</u> (collective farms) and <u>souhozes</u> (State farms). The annual moome of the vast majority of the people has greatly increased, their living and cultural standards raised to fevels undreamt of in the old days

- a All economic activity in the USSR is based upon a single general plan of national economy in the shaping of which the people participate All industrial, commercial, social agricultural, and educational enterprises work in accordance with a plan which they undertake to carry out within a given period. Ever planned take is an integral part of the general Fire Year Plan covering the whole of the national economy. Socialist planned economy has eliminated economic depressions has about-bed unemployment.
- The first Five Year Plan started in 1923, and completed early in 1932, a year alread of schedule, enabled the USSR to build a powerful industry to make the country industrially independent and well equipped for defence. Agriculture has become a collective modern enterprise conducted on the Dirgest scale in the world.

The First First Sear Plan land the economic foundations for a socialist society the Sectific completed in 1937, eliminated all exploiting classes aboleshed the causes for the exploitation of man by man According to Viacheslaw Molotos,

"Socialism the first phase of Communism has in the main already been built in our country. Our society now rossists of two classes: friendly to each other of workers and peasants, united in a common cause the cause of building Communism. The line of dimarcation between the two classes of the working records of the LSSR, is

# END OF OPPRESSION NATIONAL QUESTION SOLVED

Βv

### CHIMNAZ ASLANOVA

1 Several Nationalities. 2 Sowing discord. 3 End of oppression 4 Declaration of Rights. 5 Shook the world 6 Economic change. 7 When women had no rights 8 Education. 9 Equality.

1 The USSR is a country of many nationalities I ast territory streteing from the Arctic tundras to the autropies, is inhibited by scores of different peoples. Rus sans Ukrainmans Bjelorussians, Uzbeks, Georgians, Kazakhs Azerbaijanians Turkmenians, Yakuts, Buryats, Tajiks, Poles Nentci, Ossetians, Lezghins, Greeks, Tatars, Kalimyks Chukchi, Yakabur Salbeis, and numerous others.

Want and destitution was the lot of these nationalities in the past. Theirs was a life of endless misery left in the wake of frequent bloody tragedies which took their toll of thousands—and sometimes millions—of human lives. Leant called Tisrat Russia "a cursion of nation."

Prior to the Great October Socialist Revolution only the Russians were considered the indigenous population of the country. All other nationalities were termed "atters" But even of the Russians only a small minority enjoyed a privileged position. The overwhelming majority of the Russian people —the workers and peasants—nere denied political rights and hote the yoke of economic oppression

The peoples of the Far North were the victims of the traders, who would come to their habitations and exchange a sewing needle for a deer, or a buttle of sodks or a brick of pressed tea for the skin of a sable. The Chukchi would be tricked into evchanging a beaver skin for a bottle oxidal treated with makhorka and blue vitrol to give it an extra kick. In the Northern Urals traders would wheedle out a couple of the exceedingly valuable blue lox skins in exchange for an axe.

The mountaineers of the Caucasus—after having for many decades waged an unequal was for their freedom—abandoned their auls (villages) orchards and pastures and retreated high into the mountains, preferring to lead a life of semi start utton in the receives of the nal. I ridges rath thin to submit to slavery. Viany harghir, Tajiha and other inhabit tants of the mountainous destrets of Central Avia likewise left their fertile land and pastures in the valleys and retreated late. The mountains

Many a time did the peoples of the Caucasus and Central Asia suffer cruel and bloods defeat in their fight for their national independence but defeat could not stifle their lose for liberts and Tasaris Russia was always rife with insurrections and refellions of the oppressed points.

2 The Tsaris Government tired to paralize the result to confidence of the subjugated peoples and to maintain its own rule by soming batted and discord among the various nationalities and inciting one nation against another. Russians against Jews Armenians against Archangamans the Turkmenian tribes against one another, etc.

Ant Jewish progroms and massacres of other nationals were quite frequent in Tsarist Russia. In the Caucasus a sle town Shusha, was razed to the ground and most of its inhalitants—about 20 000 people—daughtered as the result of a blood massacre instrated by the Tsarist Govern.

its inhabitants—about 20 000 people—saughtered as the result of a bloody massacre instigated by the Tsarist Government authorities

The Tsarist Covernment resorted to progroms and inctement of national hatred most often as a means of stemming the rung lide of the resolutionary movement in the country. By these means the Tsarist officials street to divert the anger of the people from the autocracy, to blame one nationality for the misery and destitution of another to head off the struggle of the working people argant the Tars a arbitrary rule

Jews Azerbaijamans Uzbeks and people of many other nationalities were not allowed to hold Government positions. The Tearest Government was particularly ruthless in its policy of hate with regard to the Jews.

The numerous people inhabiting the territory of the former Russian Finpire endured the double yoke of the Tsarist Government and of their own landfords, feudal princes, priests, and merchants

The policy of the Tsanst Government was to keep the custacted peoples of its columnes an a state of agnorance and darkness in pre-re-obutionary Kirghuna only one out of two hundred could read and write. There was not a single university or college in Karakhstan, Kirghuna, Armenia and other colonies of Tsara Government. The number of elementary schools could be counted on one's fingers Instruction in the native languages was forbidden. No interature was published in the languages of the oppression of the country of the country

ed colonial peoples. The creative genius of the non Russian nationalities was suppressed. The treasures of folk art, the products of the age old national cultures of the Ukrainian, Georgian, Armenian, highiz and other peoples, were buried in oblivious. In Georgia people were persecuted for singing popular folksongs. The Ukrainians were not per mitted to have their own theatre. Scores of peoples of old Russia even had no alphabet of their own.

- 3 The Great October Socialist Revolution, which transformed the former Russian Empire into a free domo cratic State into the fatherland of all labouring people put an end to national oppression. The October Revolution emancipated all the peoples of Russia and they have since become the musters of their out destines.
- 3 A few days after the victorious October Resolution on Norember 15 1917 the Declaration of Rights of the Peoples of Russia a document of the greatest historic significance was signed by Lenin and Stahn the leaders of the Revolution.

This document announced the principles of the national policy of the Soviet Government

- 1 Equality and sovereignty of the peoples of Russia
- 2 The right of the peoples of Russia to free self determination, including the right to second and form an independent state
- 3 The abolition of all national and national religious privileges and restrictions uhatsoever
  - 4 Free development for the national minorities and ethnographic groups inhabiting the territory of Russia

The Declaration ol Rights ol the Peoples of Russia pointed out to the labouring masses of the various nationalities the only way to their emancipation—the brotherly union of peoples, their common struggle against the rule of the bour geoise—for their independence and Ireedon.

The Russian workers and peasants, fighting in close unity with the working people of all the nationalities of the Soviet Republics, defended their State independence and routed the internal counter revolutionary forces and the foreign intervationists. This historic victory of the Soviet power welded the working people of the various nationalities into a mighly force.

In 1922, soon after the end of the Gurl War and the defeat of the foreign interventionists, the first All Union Congress of Soviets was convened in Moscow This Congress decided unanimously to form the declaration adopted by the Congress stressed the voluntary nature of the union of all the Soviet Republics, each of which reserved the right freely to escede from the Union

The amalgamation of the several Soviet Republics into a single Union was dictated on the one hand, by the problems of economic restoration following the havoe wrought by the war, and, on the other hand, by the instability of the international situation and the danger of new attacks which necessitated the formation of a common front of all the Soviet Republics in the face of the capitalist world surrounding them.

The Great Socialist October Revolution abolished all national privileges and restrictions

But there still remained the heritage of the past—the actual inequality of the various peoples as a result of the deliberate policy of the Tearity

Government to maintain a different level of economic and cultural development for the different nationalitis. When the Soviet Republic was formed, the Party of Lenin and Stalin at once set out to do away with this inequality.

The working class of the great Russian people and the application of the great Russian culture with centures of development behind at came to the assistance of the nationalities which had to mained backward in their economic and cultural development Russian culture has exercised an enormous and beneficer influence uson the culture of all the peoples of the US-SCR.

If the the abolition of political inequality and of the exploitation of man by man the causes for national entity have also been removed

Suleman Stalsky, the jamous peoples poet of Dagh either, once said The Bolthevik upheaval which shook the whole world has shaken up our old mode of life as well. Our wast plains have been lighted up by the bright and eternal fire of the Great October Revolution. The light of this revolutionary for has prentreted to the mount turn fastnesses of the Caucasus as well as to the deserts of Central Assa to the Far Eastern tunga as well as to the tundras of the Far North.

There are peoples in the Soviet Umon that have in two deades made a leap from medieval backwardness to twentich century conditions. Modern culture has penetrated to the most remote and maccessible ands withher the natives." once 50% withdrew in order not to submit to the Tarrist colonizers.

All the national republics have been progressing at a tempestuous rate. Their numeral wealth no longer has idle in the bowels of the earth. Each year brings with it disco

veries of new deposits of gold, zinc, coal, manganese, oil, zin, iron, lead, sulphur, etc. Over the landscape rise the derricks of newly sunk mines and the smokestacks of recently huilt factories. Powerful iodustries have sprung up in the various national republies. Coal, copper and lead in Kazakh stan manganese ore in Transcaucasia, coal in Kurghizia, zinc in 'orth Osetha is the Caucasia, oil in Cheebeen linguisheita and along the southern slopes of the Urals in Bashkiria—all these mineral resources have become the basis for the industrial development of the respective republics.

In the past, the coal copper and lead resources of Kazakh stan were left practically untouched There was even no ranhay here before the Revolution The first railroad to traverse Lazakhstan was the Turksib, built in 1928 32 it counces furkestan with Siberia and has brought to life wast stretches of som desert land.

A marvellous transformation has been wrought in the economic life of Uzbekstan. Here a number of luge textile mills have been built, and a powerful and complex irrigation system has brought about an unprecedented development of cotton growing.

Arerbaijan had only one industrial centre in the past-Baku, famous for its oil fields. But the Baku oil resources were exploited in a wasteful manner. The oil kings reaped continuous profits, while the whole country and the population of Azerbaijan lingeted in poverty. At present man, new industries are developing in Azerbaijan, while the output of oil has increased more than threefold.

6 Every one of the cleven republics comprising the U.S.S.R has been undergoing a profound economic change and development The railway stations of the Ukraine slone

now handle more freight in a year than all the railway etations of Tearist Russia in 1913

More freight and read is carried by airplanes in Frans scaucisia, Central Isia and Ka akhiston than in German, Great Britain and France combined

Industrial progress in the national republics has been accompanied by an intensive development of agriculture Col lective farming has transformed the old auls and kishlaks Modern scientific methods of cultivation and stockraising have been introduced where formerly primitive nomadic economy prevailed Hundreds of thousands of tractors harvester com bines and other machines are used on the fields of the collective farms and State farms. Mountainous regions and boundless steppes where formerly only the wooden plough and matteck were known have now been provided with modern implements and machines for efficient farming 88 000 tractors and 27 000 harvester combines are in use on the fields of the Likraine The collective farms and State farms of Byelorussia disnose of 8 100 tractors 4 000 threshing machines 4 000 trucks 1 200 flax pulling machines The valleys and plateaus of Lirghina are cultivated with the help of 3964 tractors There are 6 885 tractors and 2871 harvester combines in Tataria 5 562 true tors in Azerbaijan etc

New crops have appeared in the national republics. Rice growing has been introduced in the Ukraine. In Transcau casas tea is grown on an extensive sole and large citrus effort groves have been planted. The breeds of cattle have improved. Among sheep the fine wool varieties are becoming prevalent.

The growth of industry and agriculture has created a farge demand for workers proficient in various trades and

professions which were formerly unknown in some of the national republics. Among the native Kazakh population, for instance there were formerly no suiths even, not to speak of engineers, agronomists or physicians. Today Kazakhstan has its own native increase in the number of professional people and the variety of professions among the people of the remote sections of the Caucasus. Central Asia the Far North.

7 One of the mamiestations of the former cultural backwardness of some of these peoples was the tenacty with which the survivals of tribal feudal customs persisted among them, particularly with respect to women. When a girl was ready to be married she was traded off to the highest hidder the consent was never asked. She went to the man who offered the highest 'ransom.' Women were frequently abducted then the war were prisons to them. No strange man was allowed to see the face of a woman who did not belong to him. Women had to wear veils ("chadra" among the Azer bayanians) or nets made of horse hay ("chavchan" among the Tajiks and Urbeks). The vendetta existed among the mountainerers of the Caucasus, and blood feuds between families were kept up for generations.

Among most of the Eastern peoples women enjoyed no rights whatscover Woman was looked down upon She was the docile slave of her husband, father or brother. The Let ghans of Daghestan used to express contempt with the words "If you can it do that you are nothing but a woman." In Azerbaijan men would say to women. "Don't mix into men's affairs with your dough-covered hands."

Only Soviet pauer brought the women emancipation.

The Soviet laws protect the rights of women, which are in every respect the same as those of men. Under the beneficent

rays of the Societ national policy thousands of women in the East have developed and become statesmen, doctors, engineers, fiers teachers agricultural experts etc

The Soviet Government has from the very outset devoted great attention to the development of national culture and public education in the border regions of the former Russian Empire

8 Universal free elementary education is enforced in the national republies just as it is throughout the Soviet Union. The number of children attending school has in creased 35 times in Azerbaijan, 37 times in Turkmenia. 53 times in Uzbekistan, 48 times in Karskhitan, 68 times in Armenia, 172 times in Karskhita.

In 1936 children in the USSR were taught in school in 112 languages, many of which had no alphabet of their own before the Revolution

The few universities and scentific matitutes that existed in terrary times were all Russian. There were many national ites that knew nothing about them. At present there are 22 institutions of higher learning in By-forwasia, 13 in Azerbaisia, 19 in Kazakhistan. The number of universities and scientific institutes in the Ukraine has grown from 15 to 139. The Ukraine today has more institutions of higher learning than Germany, although the population of the latter is twee as large as that of the former. The universities and other institutions of higher learning of the Russian Soviet Federative Socialist Republic alone are attended by more than three times as many students as there are in Great Britain, Germany and Italy combined.

The national policy of the Soviet Government has stimu lated the development of creative talent and has opened the spring wells of national art. It has revived the creative forces of the peoples. The works of the great writers of the Ukraine, Georgia, Armenia and other republics have become the property of the entire Soviet nation. The rich heritage of the culture of the various nationalities has been made accessible to the Russian people and to all the other peoples of the Soviet Union. The Ukraiman poet Taras Sheichenko, the Georgian poet Shot' ha Rust'nvell, the Kirghinan epos are now read by millions in the Soviet Union.

On the other hand, Rassan and world culture has become accessible to all the nationalities inhabiting the USSR, extracting a tremendous influence on the development of their national culture. Pushkin and Darwin, Shakespeare and Cervantey, Tolstoy and Marx have been translated into dozen of languages of the Sowiet peoples.

9 All the nations and races of the USSR, irres pective of their past or present condition, and irrespective of their numbers, enjoy jully equal rights in all spheres of economic, public, political ond culturol activity

Article 123 of the Constitution of the USSR states "Equality of rights of ethens of the USSR, ures pectice of their nationality or race, in all spheres of econo mic, state, cultural, social and political life, is an indefea with low.

"Any direct or indirect restriction of the rights of, or, conversely, on yestablishment of direct or indirect privileges for, citizens on account of their race or nationality, as well as any advocacy of racial or national exclusiveness or hatted and conternot, is ununshable by law"

All the eleven Union Republics enjoy equal rights in absolutely every respect. Each of these constituent republics

has its own constitution, which takes into account the specific leatures of the republic and is drawn up in full conformity with the Constitution of the USSR To every Union Republic, as reserved the right freely to secode from the USSR. The territories of the Union Republics cannot be altered without their convent.

The highest organ of State authority in the USSR is the Supreme Souret of the USSR, which consists of two Chambers enjoying equal rights—the Soviet of the Union and the Souret of Nationalities

Each Union Republic, irrespective of the \*ize of its population, elects 20 depatites to the Sowet of Nationalities each autonomous region five deputies, and each national area one deputy. Thus the Azerbaijan Soviet Socialist Republic with a population of slightly over three million, and the Ukramian Soviet Socialist Republic, with a population of over thirty million, each send the same number of deputies to the Soviet of Nationalities. This places all the constituent republics, irrespective of the size of their population, on an equal footing, and enables each of them to fully defend ats specific interests in the Soviet of Nationalities.

Such, in brief, are the main features of the policy which has led to the solution of the national problem in the Soviet Union We may sum up in the words of J V Stalin, the author of the Constitution of the USSR

"the absence of exploiting classes, which are the principal organizers of strife between nations the absence of exploitation, which cultivates insulial distribution and kindles nationalist passions, the fact that power is in the hands of the working class, which is an enemy of all end-avenent and the true which of the ideas of inter nationalism, the actual practice of mutual and among the peoples in all spheres of economic and social life, and, finally the flourishing national culture of the peoples of the USSR, culture which is national in form and Socialist in content—all these and similar factors have brought about a radical change in the aspect of the peoples of the USSR, their feeling of mutual district has disappeared a feeling of mutual friendship has deep loped among them, and thus, real fraternal co operation between the peoples has been established within the system of a smale federated state.

"As a result we now have a fully formed multinational Socialist State which has stood all tests, and the stability of which might well be envied by any national state in any part of the world"

To Soriet people the amity of nations is the most sacred, anost indispensable condition for the further success of Socialism. The most gifted arists and writers devote their works to the idea of internationalism and the brotherhood of peoples in the Soviet Union. These works reflect the thoughts and sentiments of the millioner.

The Dungans, a people inhabiting the approaches to the central range of the Tran Shan Mountains in Central Asia, have a fine saying expressing the idea of the fraternal friend ship of the peoples

'The bonfire will burn brighter if all the twigs are put together

## PLANNING SCIENCE

пv

#### A BACH

t Electrification of the country 2 Big sum for research 3 Science—industry hank 4 902 institutes 5 Factory laboratories, 6 Overtaking capitalist countries 7 Theory and practice interrelated. 8 Rise in cultural level 9 The red letter day

In Socialist economy which is based on the application of the latest technique and makes use of the vast experience accumulated by man science and scientists hold a high place. The Crul War and foreign intervention were still in progress when the young Sower (Republic, beset by enemies on all sides and in dire need of the bare necessities of hie stablished in extensive system of scientific research institutes, at the same time making every effort to improve the working and living conditions of those engaged an scientific work. Even in this early period Soviet scientists were widely enlisted in the work of drafting a plan for the development of the national economy, since only science could serve as the foundation of such an undertaking

It was in 1919 and 1920 that, with the collaboration of two hundred scientists and engineers representing the most diverse departments of human knowledge, and on Lenni's and Stalin's initiative, the celebrated plan for the electrification of Russus was drawn up.

This plan, which at first encountered many a sceptical pier, was put into execution and completed much earlier than the time originally specified. The former Imperial Academy of Sciences was singled out for particular attention by the Soviet Government, although the majority of its members were at first far from sympathetic to the Socialist October Revolution.

The great Russian writer, Maxim Gorky, mitiated the formation of a Government committee to ease the life of men of science In the most disculty years of the young Soute Republic this committee managed to have sanatoriums and rest homes set aside for scientific workers secured various allowances for them, and aided them in procuring foreign literature and apparatus for the pursuit of their scientific labours.

In 1925 when the Academy of Sciences of the U.S.S.R. / as it was now styled celebrated its bicentennal, the Soviet Government invited numerous foreign savants for the occasion. The whole tenor of the festivities held under Government aux puesses was ample proof of the parament importance attached by it to science as a fetor in the building of Socialist sweety.

Science has made great strides in the USSR during the twenty-one years of the latter's extreme. Objective proof of this statement is the fact that in 1938 there were no less than 902 scientific research institutes in the country, with a total staff of 29,246 scientific workers. These figures are exclusive of factory and collective farm laboratories and their personnel and of the observatories in the Arctic, which come under the jurisdiction of the Chief Northern Sea Route Admin stration. In January (1938) the grand total of all scientific workers in the USSR was eighty thousand.

Academs of Sciences

The following tables illustrates the expansion of the Academy of Sciences

•	1917	1938
Institutes of the Academy	1	58
Vembers of the Academy	45	130
Scientific workers	109	3 4 2 0
Appropriation (roubles)	1,500,000	127.000.000

2 In 1938 Soviet budgetary appropriations for scientific research work aggregated 1,016 000,000 roubles

As to higher education, statistics show that in all Russia before the Revolution there were only 91 universities and colleges, with a total enrollment of 112,000 students, primarily econs of the nobility the landlords and the bourgeoise, while today the corresponding figure are 716 and 601,600 with a student body consisting of the sons and daughters of workers, neasants and members of the intelligentials.

These figures alone suffice to demonstrate the close to between Soviet science and the people. But to these mere numbers of scientific workers and students, true sons of the people, is to be added the all important fact that in USSR the achievements of science do not become a source of caricfinient of only a small group of persons, to the detriment of the test majority of the population, but accrue to the benefit of the whole community. This distinguishing feature of Soviet sections has asserted itself from the very inception of Soviet power.

We have already made mention of the enlistment of men of science in the work of drawing up the country's electrification plan. The subsequent Frve-Year Plans for the national economic development of the USSR, which have • e in question for further investigation under the supervision or in constant consultation with governing institute. If there is no corresponding departmental institute, the governing institute itself works out this particular question.

The prime function of the departmental institutes is to render excentific and technical service to the branches of industry and agriculture to which they are attached. These institutes are charged with finding laboratory solutions for problems that arise in the routine of factory production, to seek to improve the technological processes in use and to work out new processes. In cases where it is necessary to make a thorough theoretical investigation beyond the caparity of the departmental institute, it applies for assistance to the governing institute with which it is associated.

The functions of the departmental institutes also in clude the rendering of assistance to factory laboratories and the exercise of some measure of control over their work

5 The factory laboratories exercise control over production from the angle of technique, and do the research work incident to any specific scientific problem the factory must solve. These laboratories thus become a vital force in the work of their respective factories, and represent the primary research cells in the general system of scientific research.

In organizing the research work necessary for the building of Socialism, the Soviet Government applies the rule that scientific workers are to be given every encouragement to use their own initiative

The annual plans drawn up by the director and the scientific collaborators of each institute specify the theoretical and practical work to be performed by each research worker

and sipulate the time allowed. These plans are preliminarily discussed at meetings of the various sectors concerned and at the Scientific Council and are then taken up and acted on at a general meeting of the whole staff of the institute. However, it is the director who is primarily responsible for the execution of the plan as finally adopted.

When the idea of planning assence was first proposed it was received with some misgivings. In doing research work you proceed from the known to the auknown you seek and create what is new. Hence the question areae how can discoveries as yet unknown but contemplated for the future be planned for a year ahead with a fixed calendar prescribing execution.

The explanation lies in the fact that all research is a quest for the solution of definite problems by means of experimental operations. The annual plan specifies the erries of operations which the investigator expects to yield the solution sought. The investigator does not undertake to obtain within a given time a complete solution of the problem he is dealing with the undertakes merely to perform certain specified experimental operations in accordance with a definite time schedule. Of course no experienced investigator has any difficulty in calculating the time required for these operations.

The question of planning science no longer causes per plexity. Many who feared that planning would peopardize the creative faculty of scientists are now commended that it is precisely due to planning that in the U.S.S.R. theoretical and practical research including also scientific research has reached a state of real florescence.

The plans worked out by the various inst

mitted to the respective People's Commissariats, where they are co ordinated on antional scale. The chiminates duplication of work, with the needless water of energy and funds it ould entail. After receiving the approval of the People's Commissariats, the plans are passed on to the State Planning Commission, where they are put in final shape, then they are submitted to the Council of People's Commissars of the USSR for approval.

The present plans of the Soviet Union's scientific in-this tons, particularly those of the Academy of Sciences of the USSR, conformed with the requirements of the Third Five ear Plan for the national-economic development of the Soviet Union (Beld-bewks). This third quinquennial plan was thoroughly discussed in all its details and was approved at the Eighteenth Congress of the Communist Party of the Soviet Union (Boltheviks) held in March 1939

6 This Congress laid it down as the fundamental tack of the Soviet Union to overtake and surpass the advanced capitalist countries also economically, i.e., in per capita production The accomplishment of this tack provides all scien tific institutions of the country with work rich and live in content. For this plan provides for a colossal increase of production in all branches of the national economy increase, however can only be secured by further prospecting for and studying the country's mineral wealth, by distributing industry, agriculture and transportation highways in a manner that will yield the best economic results, by constructing still more factories and mills, by further improving the technolo gical processes of production, etc. Hence, what is required here is concerted effort by economists, geologists builders, technicians, and members of all other scientific professions to promote the common cause

But it would be a mistake to think that in sciting itself practical aims science in the USSR neglects the solution of theoretical problems Oute the contrary is true Societ scientists strive for a happy combination of theory and prac tice and for their interaction Moreover it often happe is that the solution of practical problems must abide the solution of related theoretical problems. For example the Soviet Union has constructed on the Volga the most powerful hydro electric nower stations in the world while in Moscow the 1 rlds tallest structure the Palace of Soviets is already being built In operations of such gigantic proportions the approximate calculations hitherto employed in construction engineering must yield to new and more precise equations 1 h ch it is imperative to work out Regarded in this light higher mathe matics often considered an abstract science lecomes supremely practical Such examples could easily be multiplied

Take for instance the study of the physical laws of the electron. The introduction of automatic and remote control in industry is largely dependent on theoretical investigation in this field. But there are also other theoretical themes engrossing the attention of Sowiet science which do not yield direct practical results and will not do so in the near future such as the vivises of the atomic nucleus.

On the other hand scientists obtain a mass of valuable data from practical experience gained in lactories on construction projects ete. This material is very valuable in making generalizations of grave import.

7 Thus in the work of Soviet research tions of theory and practice are closely is another intrinsic leature of Soviet science

qu Ti that marked the days of the elections to the Supreme Soute of the USSR and to the Supreme Souted of the respective Union Republics As the people wolked up to the ballot boxes to cast their votes, one could read in their radiant faces the pride they took in the performance of this important citied duty. The candidates of the Communist inno Party block were elected everywhere without distinction of sex or nationality, for they were the finst specimens of Soviet citizenship—the best of the workers, collective latmers and nuclessionality.

The sessions of the Supreme Soviet of the USSR have demonstrated the close harmony execting among all the peoples of the great Land of Soviets, and have given proof of their moral and political unity. This unity, this principes sesset, is the guarantee of the invincibility of the USSR the men of science have made common cause with the masses, and this has intected a new competiture there.

## MASS TECHNICAL TRAINING

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#### T FYODOROVA

1 Free education, 2 Two million skilled workers 3 Rapid industrialisation 4 Birth of Stakhanov move ment 5 Collective farms, 6 The Third Five-Year Plan

When the young entirens of the Soviet Union enter upon their working careers, their prospects of success are indeed unlimited, for study and labour are protected and encouraged in every way by Soviet law, the doors to knowledge and advancement stand wide open to everyone.

1 What to study further, what trade or profession to choose—these are the only problems that face the Soviet boy or girl just out of high school. For not only is there no charge for tuition in any educational institution in the USSR, not even in universities or colleges, but students receive State allowances during their term of study.

Young people who enter some factory or mall have vast opportunities for advancement, even if they do not have a complete high school education. The factory trade schools train, highly skilled workers for every branch of industry and transport. In these schools the pupils receive a general education equal to that provided in high schools and also learn some particular trade under the supervision of experienced instructors.

The factory trade schools are furnished with special work rooms classrooms and experimental laboratories Practice work is done right in the factories under the supervision of engineers technicians and skilled craftismen. Young people are granted State allowances for the whole period of their attendance at the training schools. On graduation each stulent is given a job at the trade he has fearnt

I studied for several years in the school of the Moscov Caoutchouc Factory. This was one of the happerst and most memorable percods of my like. The training I received in this school enabled me rapidly to get accustomed to work in a factory and to cope with the most practical problem in the process of my work.

2 Duting the fifteen odd years of their existence the factory trade schools have given the country about 2000 000 skilled workers of the most varied trades. Quite a few of the country's outstanding industrial workers who have sethigh records of labour productivity are graduates of such factors schools.

Naturally not all workers attend these schools A great number of workers come to the factories without any previous technical training. A worker who entered a factory in Tsainst Russia as an unskilled labourer remained such for many years and very often all his life. No one took any interest in his advancement.

Today things are altogether different. When a new poorly trauned ar entirely untrained person storts working in a Soviet factory the factory management and it everkers organizations do everything they can to turn him into a skilled worker as quickly as possible. The factory trade union committee trees to induce such a worker to

attend some school or study circle to raise his political and cultural level, the foreman assigns shilled norkers to help him out at work, the factory management pass all the expenses of his schooling

3 The rapid industrialization of the USSR made the task of mastering the new machinery and the new technological processes particularly important. This in its turn, necessitated the mass training of skilled workers

Three fourths of all the machine tools in the Soviet Union are less than ten years old. They are absolutely new types of machinery which the majority of our workers never saw before. Old workers had to be taught anew, then technical knowledge refurbished and increased, while at the same time prousion had to be made for affording the vast multitude of young people the requirate facilities to become highly skilled workers.

This was the object which the Soviet Government had in minn requirements of technical knowledge for 255 trades in heavy industry. A time hant was fixed after the expiration of which all jobs requiring a certain degree of skill could be filled only by workers possessing such a minimum of tech nical knowledge, which had to be proved by a certificate to that effect.

This proved a strong stumbles for mastering the new technique. Technical training became compileory for all workers, both men and women, engaged in the most important trades. Technical study circles and courses were organized in the overwhelming majority of the country's plants and nulls enabling every worker to acquire the necessary minimum of technical knowledge without micrupting his regular work. There was, of course, no tustion charge, for all educa

tion in the USSR is free, as already stated

Soon this system of technical education was introduced to all industries

The curriculum of the technical minimum courses instituted for the workers in heavy industry includes the following subjects

General survey of technology and the organization of production.

Accident prevention and salety appliances

Principal properties of materials .

Structure operation and care of machinery and tools,
The functioning and operation of interconnected machines.

Elementary principles regarding standards of work, uages and production costs

During the first half of 1935, State examinations were held throughout the country as a means of checking up the progress made by our workers in mostering the required minimum of technical knowledge. By July 1, 1935 almost 800 000 workers engaged in heavy industry had passed these examinations. More than two thirds of this number were graded "excellent" or "good."

The value of this system of mass technical education for workers is strikingly illustrated in the person Ivan Godov, formerly a farm hand and now a Stakhanovite of great renown and a member of the Supreme Soviet of the USSR In 1934 be started to work in the Sergo Orjonkidze Machine Toold Works in Moscow as an unskilled laboure. Up to that time Godov had had no conception of machinery or tools. At the fartory he signed up for a six month technical course, which he completed with success. He rapidly learned the techno-

logical processes and technique of operation of the most complex machines. And the very next year, having become a milling machine operator, Godov set a world record for labour productivity in his line. He holds the record to this day

4. The year 1935 marked the birth of the Stakhanov movement, which spread to all branches of industry and agriculture with sinaning rapidity. Stakhanovites are peoplish have completely mastered the technique of their jobs, tho are able to squeeze out of technique the maximum that can be squeezed out of it, and who are imbared with the ambient to help increase labour efficiency on a national scale. The Soviet Government wholeheartedly supports the Stakhanovites and has still further extended the technical education of the worker masses. Education within the range of the required technical minimum has become universal and compulsory for all men and women workers.

Special advanced technological courses, called Stakha novide courses, have been set up for those who have passed the State technical manimum examinations. Courses for master craftsmen of Socialist labour have been instituted for out standing Stakhanovite workers who have set examples of high labour productivity.

A similar educational system is also an force in the railway transport service. In 1936, for example, no less than 500,000 railwaymen were attending various technical minimum courses and study circles. The student body consisted, in the main, of subordinate railway officials, of workers in the most im , joitant railway officials, and of railway shop men.

The foremost transport workers are taking up more advanced technical studies. Workers who have successfully completed their studies are promoted to more responsible posts, to higher positions. Very frequently the head of a

erew or brigade becomes a foreman, an assistant engine dri er is made a fullfledged engine driver, a switchman a shunter, d a shunter an assistant station master

5 Collective farms, State farms, and machine and tractor, stations also have a great variety of scientific farming and technical study circles. Here collective farmers learn to drive tractors and operate harvester combines, they study agrommy and master the technique of Socialist agriculture. Tractor drivers combine operators, chauffeurs and truck drivers study to become brigade leaders, foremen and mechanics.

Technical education for workers has acquired a genuinely

The worker in a Soviet factory is not a mere automaton, mechanically performing a set task, he is not a mere apped age to a machine or lathe. The general survey of technology and the organization of production, two subjects included in the curriculum of the technolac courses, give the worker an insight into the function of each shop and the inter connection between the startous shops as well as of the technological process curried on in the factory as a whole. A certain amount of time is devoted in these courses to introductory lectures on the general tasks of the particular branch of industry and on the national-economic plan of the whole country. These technical courses also improve the general education o the workers.

In 1938 the courses for master craftsmen of Socialet labour in the Stalin Works at Kuznetsk were attended by 2,222 workers including many women. Among the students were steel and iron workers, electricates mechanics and power plant workers. The vast imagority of three were people from eighteen to thirty years of age. Stakhanovites of eleven nation alties attend these courses.

The classes are held in two well equipped buildings having a total of 61 classrooms. There are special classrooms for the principal general and technical subjects—chemistry, physics, mathematics, general electrical and structural engineering and the machining of metals.

The school library contains 20,000 books It keeps more than one hundred different newspapers and magazines

The teaching staff consists of 59 instructors, six of whomeare engineers engaged in production. During the first half of 1938, 91 of the students were promoted to responsible postures to various adustrial establishments.

The Petrovsky Metallurgical Works (Disepropetrovsk), the Stalinogorsk Chemical Works and many other large planis has a also installed their technical courses in splendidly equipped premises. Six new mass technical training schools were in the Donetz Basin started before the basin.

In the autumn of 1938, 218 Stahhanovite courses were given in the Stahngrad Tractor Works. They were attended by 3,300 workers. The special subjects required by the tractor works were taught by over 200 engineers and technicians, and a great number of the factory's best Stakhanovites who had mastered the technique of tractor construction to perfection.

The Molotov Automobile Works in Gorky has about forty Stakhanovite courses

This method of organizing technical training and of promoting people to leading posts as they acquire the requisite knowledge has become an ordinary, every day occurrence in the Soviet Union. Scores and hundreds of workers in every factory, mill or mine are taking courses to increase their technical knowledge, and this mass technical training is giving the to ever increasing numbers of outstanding States.

#### khanovite workers

- In 1936 315 per cent of the young workers in four t industries machinery iron and steel coal and textiles—already possessed a complete or junior high school education. Compare this with 1919 when even in such an important centre of the country as Leningrad young workers on the average did not have more than three years of elemen tars, schooling.
- 6 During the Third Five Year Plan period the productive of obbour in the industries of the USSP was to u crease by 65 per cent. This factor alone would account for an increase of 62 000 000 000 on bubles in output of manufactured goods in 1912 as compared with 1937. In railroad rains portation labour productivity was to increase 32 per cent during this period and in mater transport 38 per cent.

One of the vital conditions for fulfilling the Third Five Year Plan was the training of skilled workers technicians and engineers as well as the widespread adopting of the most up to date technique and the scientific organization of production. The system of courses for training and requalifying skilled workers and master craftsmen of Socialist labour was expanded. More than 0.000 000 skilled workers of various trades would be trained during this period. A total of 1.00 000 technicians, as well as 600 000 engineers and other highly skilled university and college trained experts would be graduated during this period.

The Third Five Year Plan period saw the extensive, application of measures directed toward the execution of the historic task of raising the cultural and technical level of the working class of the USSR to that of engineers and technicians

## RECORD-BREAKING STAKHANOV MOVEMENT

RY

### A STAKHANOV

z Stakhanov s life-sketch 2 World record 3 Movement spread like wild fire 4 High public spirit. 5 Up-todate machinery 6 Life of security and happiness 7 No physical exertion

A powerful movement for more efficient methods of orga many mork has been developing in the Soviet Union. This movement has brought in its train an improvement in labour productivity equal to two three and even ten times the per formance heretofore. Its eradle was the coal industry whence it spread with lightning speed to other branches of industry, and also to agricultive. It has become a mass movement that has everywhere shattered the old now antiquated estimates of rates of output and production capacities.

How is it that this vast movement of Soviet working people for high labour productivity has been named after myself a plain hewer of coal? What is my method of work?

Before answering these questions I should like to sketch my life in brief

1 I am thirty eight born into a poor peasant's family My childhood years were bleak and joyless. At the age of nine I was already working as a hand on a rich peasant's farm where I got no pay except my keep. Then I was a shepherd for three years and after that again a farm hand Under the Soviet Government I got a job in a mine

I went to the Central Irmuno colliery in Kadievka (now Sergo) where nearly thirty men from my village wete em ployed There I started my career in the usual way first I was a breakman then a pony man and finally I came to hew coal myself

As time went on 1 grew attached to the colliery and the people that worked there the work became my most vital interest.

When I first started hewing with a pneumatic pick it took me a while to get the knack of handling the tool. I kept at it trying my level best until my perseverence was rewarded I gradually acquired the technique of the business and my performance stead by increased. While the standard daily rate of output was five tons which meant covering about three yards. I would often make eight tons covering as much as five yards. In a year a time I was sent to take a special course in coal hewing with pneumatic picks. This course helped me a great deal and I began to hew as much as ten tons in one shift. But I did not want to stop there. I wainted to keep increasing my output for even then I realized that eight or even ten tons of coal in a days work was a long way from what could be got out of a pneumatic pick.

My observations calculations and reflections brought me to a number of conclusions and practical ideas for increasing output. The coal face I was working was divided into eight small sections. There were ten hewers in every shift and even if one of us had the abilities to produce more there was no exhance to do so for leek of elbow from The small.

sections were so crowded with people that they got into each other's way Besides, the work in general was so organized that the picks were used only about three to three and a half hours a shift, or even less. The rest of the time went into be timbering, for we did both the hewing and the timbering our selves, and while we timbered the picks lay ridle.

2 When these handscaps were removed, I hewed 102 tons of coal in a single hour shift Such performance was absolutely unheard of , seem, eight and nine tons had been the maximum output in our puts. This output of 102 tons was a world record. Even in the old coal fields of the Ruhr district, with all their accumulated experience, a worker's average daily output is only about 17½ tons of coal.

Such was the result of the new system of production that swept away every obstacle in the path of the worker's initiative and industry

And what happened after I made my record ? The very next day Dyukanov arranged his work so well that he hewed 115 tons in his shift. The day after, Terekhin hewed 119 tons, and a few days later Kontsedalov hewed 125 tons and Savchenko as much as 151 In quite a short time I was able to hew 200 tons in one shift. This might really have seemed the maximium Honester Nikita Irotot hewed 240 tons and Artyukhin 310, scoring 536 tons only a little later. All around me I saw my fellow workers eager to get more and 'more coal from their sections, from their picks. Scores and hundreds of people began forthwith to adopt my method, perfecting it all the time. No more than a few weeks elapsed before miners hewing 200, 300 or even more tons of coal with every shift could be counted by the dozen.

3 So this first record due to proper planning and organization of production gave rise to ever new records, each more remarkable than the preceding, first in the pits of that one collerty, and later in other colliertes and other coal fields. The movement spread like said for to other economic fields—it took firm root in the transport system, in the factories, in agriculture, in fact it embraced every swhere of economic activity.

So it was that the first Stakhanovites made their appear ance, and now they number millions

The ranks of the Stakhanovite army are swelling irre sistibly By the middle of 1938 there were in the Donetz hasin over 350,000 miners holding certificates of master coal hewers (semior and jumor grades) The record for the iron and steel industry is as follows in the Central Regions, the Stakhanovites make up over 25 per cent of the total number of workers and in the South as much as 30 per eent In the heavy machinery industry over a third of the workers are Stakhanovites, 33 per cent in the medium machinery, the transport machinery and the tractor industries, 34 per cent in the electrical machinery industry and about 50 per cent in the oil refining industry. Thus, in a number of industries from a third to half of all the workers employed are Stakha novites that is, people who possess a high degree of profi ciency at work, who have shattered the old, now out-of date ideas of what could be got out of machinery

Naturally, such a spread of the Stakhanov movement, such a mass increase in labour productivity, was bound to / have a very favourable effect on the country's whole economic life, and that is the clue to the successful fulfilment and over fulfilment of our unational-economic plans and the rapid in crease in output in every field

During the period of the Second Five Year Plan the average output per worker in the coal industry (coal face workers only) has increased by 70 per cent

In 1932 the average coefficient of volumetric efficiency of bird furnaces was 1 75, in 1938 it improved considerably, going down to 114, and at times almost touched 1 in come of the mills the results of Stakhanovite work are even more of the mills the results of Stakhanovite work are even more striking. For instance, at the Stalin Mill in the Kurnets. Basin the coefficient in 1938 was 095, and for one of the furnaces—No 2—as low as 072. The coefficient of the Krivoy Rog Mill was 094 in 1938.

In 1933, 28 tons of steel was the average rate per square meter of hearth. In 1938 the average was 464 tons, while some Stakhanovite smelters have achieved 12 tons and more

The merease in labour productivity in large scale industry during the period of the Second Five Year Plan (1933-37) has amounted to 82 per cent, as against the 63 per eneror envisaged in the plan. In every industry the development of the Stakhanov movement has led to a marked increase in efficiency.

The coal hewers' pneumatic picks work faster achieving higher productivity, the smelting of iron is taking less time, the machinery in the factories is running more smoothly and swiftly, on the railways, trains are running at fixeter socied.

How is it that this mass movement for proficiency in production, arising in one spot, spread so fast with such overpowering force, throughout the country? Perhaps it was to some extent accidental? Perhaps the sudden appear ance of the movement implies that it will be a temporary transitory phenomenon? Far from it. Any such years of e movement would be profoundly mistaken

The Stakhanow movement dat not develop gradually, it suept the Sowret Union until whatland speed. And the reason it could spread so rapidly nas that its roots lie in the very nature of Sowret life today, that the time for the movement was ripe and it only needed a touch off, an initial stimulant, to break out and begin to spread for and wide.

The Stakhanov movement had its origin among the rank and file—in the pits at the work benches, in the shops it arose and developed on the initiative of the masses them selves. In many industrial establishments the Stakhanovites were able to achieve their remarkable results only after over coming the resistance—at times very obstinate—of those of the managers and engineers who would not part with the old ideas of what were possible production capacities and rates of output

4 The Stakhanov movement is a product of the will and high public spirit of the Soviet working people who are moved by the great desire to employ to the ut most their initiative, resourcefulness, energy and personal capacity for the sake of improsing their work of achieving hotter sensiti.

There are several factors underlying this desire, under lying the development of the Stakhanov movement

In the first place at was possible for the Stakhanov movement to become a mass movement because the Soviet people know that they are not working for the capitalists, but for themselves, for the more and more complete satisfaction of their own needs. In a country where the entire national in come is employed for the benefit of the vorking people, where

all the means and instruments of production, all the mills and factories, together with what they produce, as well as the land and its mineral deposits are the property of the working people, the whole community, every improvement in the work of the individual contributes to the general welfare. The Soute people know, they see and realize, that the better work progresses, the wealther the country becomes and the greater is the prosperity of its inhabitants. That is the reason why the Soviet people put their heart and soul into their work why they exert every effort use their abilities to the utmost—to enfiance the prosperity of these country. Loving their home land they love their machines, their factories, their work

When Stakhanovites are asked why they strive to score records, they reply as a rule that they have a real interest in their work and that the good results achieved are the natural consequence. This reply voices the general sentiment of the Source neonle

In May 1976 our mining town of Gorloska, in the Donetz Basin, was visited by a delegation of French miners On their return, they published their impressions in *The Miner* a newspaper appearing in the city of Bries 1 shall quote a passage

'We could hear the muffled sound of pneumatic picks There were four men in the gallery, plainly displeased at our appearance on the scene

"After we were introduced however, the Soviet comrades' attitude changed at once. When they raised their lamps, we could see four similar black faces."

<sup>&</sup>quot;We are interfering aren't we? I asked

- "'That's all right,' one of them replied 'You see, you our guests, and we thought first it was some of our hoys'
  - "' Don't you get paid if you have to stand idle ?'
- "'Yes, we do,' replied Yermachok, who had been pointed out to us as one of the best Stakhanovite hewers
  - "So why worry ?"
  - "'What do you mean? Any time that's lost means less coal, and we need coal?
    - 'When he said 'we,' it sounded as if he owned the mine
      - I asked him «quarely
    - "'Don't you have enough coal ?'
    - "He waved his hand impatiently
    - " I mean the country, and you're talking about me'
  - ' People work with a will, they take joy in their work And that is the source of everything"
  - 5 There is yet another very important cause for the development of the Sakhanov movement in the Soviet Union the country has been armed with up to date machinery and numerous operations have mastered this machinery. The South people have learned to promote the technique of production to get twice, three times, ten times as much out of their machinery as before. Many of the Stakhanovites may rightly be called masters of their craft—so well do they know their business, so thoroughly are they initiated into all the secrets of high labour efficiency.
  - 6 Finally, a most important factor contributing to the sand development of the Stakhanov movement has been the greater welfare of the people A life of security and happiness brings with it a new pace of work. There is more

team work and energetic application to one's job When life is good, work is smoother, faster, more productive

Such are the causes that gave rise to this popular move ment, the Stakhanov movement, whose members have come to be the notable of the Soviet land enjoying universal respect and admiration. They are a direct outcome of the Soviet order, of the Socialist system of society in the Soviet Union. They explain why the Stakhanov movement is developing so confidently, they hold the elue to its power and might

There are some who think that the Stakhanov movement 15 variety of the Taylor system Such a view is profoundly mistaken Taylor proceeded on the supposition that workers are naturally lazy, that they will always try to work slower than they could When he established his rates of output, Taylor would take the hardiest workers, time their move ments and require the same output of all the rest. His system amounts to taking the result of the utmost exertion of effort by the strongest worker as the standard of output for all the others, lowering rates of pay at the same time Naturally under the Taylor system only young workers can be em ployed, people possessed of powerful constitutions and great physical strength, capable of withstanding enormous exertion of effort for a certain length of time. It is a system which can be saddled on the workers only by force, against their wall

The Stakhanov movement, on the contrary, is a voluntary movement of the masses who are themselves interested in the Presults of their work.

7 Stakhanovite work does not call for physical over exertion It requires only a public spirited attitude toward one's work and a thorough study of one's machinery and its technique. Stalkanoute work is a combination of manual and mental tool. It enables the Stathanoutes to show their metile, to display their faculities, to give free rein to their creative ideas; it signifies the inclove of man over the machine

The Stakhanovite movement is significant, for it is the first token of the nascent rise of every worker to the cultural and technical level of an engineer or technician. Such progress by the working class will obviously mean still higher labour productivity, a degree of proficiency in producin that will provide the universal abundance which the Soviet people are working to achieve, since that is the essential precipitate to effect the transition to the new, Community, social system, under which every member of acciety will receive all products according to his needs, the needs of a culturally developed human being

Such is the significance and such the outlook of the

# THE FOURTH ESTATE

### FREEDOM OF THE PRESS

#### ВY

## VERA GOLENKINA

I Ten fold increase 2 Travelling newspapers 3 Lite rary works 4 Children's books 5 Soviet U.S.A. comparison. 6 Characteristies of publications and contributors. 7 Worker' articles 8 Campaign against bureaucracy 9 Contact with readers. 10 Monthpiece of the Party 11 Economic Construction

The USSR enjoys freedom of the press This right is guaranteed by Article 125 of the Constitution of the USSR which states

the citizens of the USSR are guaranteed by law

- (a) Freedom of speech
- (b) Freedom of the press
- (c) Freedom of assembly including the holding of mass meetings
- (d) Freedom of street processons and demonstrations

"These end rights are ensured by placing at the dis posal of the working people and their organizations printing presses stocks of paper public buildings, the streets communication facilities and other material requisites for the exercise of these rights And, indeed, in the USSR printing shops, paper mills,

halls in which to hold meetings and everything else needed to make free speech and a free press realities are wholly and completely at the disposal of the working people

In 1913, that is on the eye of the World War, only 859 newspapers with a total circulation of 2 700 000 copies were published in what was then the Russian empire

Most of the newspapers were owned by financiers and bankers, industrialists, manufacturers and big landowners. Policy was dictated to the largest newspapers of pre-revolutionary Russia by the Russo Asiatic Bank

Since the Revolution the USSR, once a backward alterate country, has become a land of progress, literacy and culture and has developed an extensive network of elementary secondary and higher schools in which instruction is given in the respective native languages of its peoples

1 Every department of the press has been broadly developed In comparison with the last pre war (1913), the number of newspapers published in the Soute Union has grown tenfold (8.550 on January 1, 1939) white their circulation has increased Jourteen times (4.7520000 copies). The total annual circulation of Soutet newspapers topped the 7000 0000 000 mater in 1932.

The leading newspopers have exceptionally large circulations Practa (The Truth) has a circulation in excess of 2000 000 copies Irresta (The Cazetie), published under the auspices of the Soriets of Working People's Deputes of the USSR is printed in 1,600 000 copies and Trud (Leabur), the press organ of the Central Council of Trade Unions in 420 000 copies. Other newspapers of large carculation are the central trade organs of the various industries, published by the respective People's Commissariats jointly with the Central Committees of the corresponding trade minons. Prominent among these are ledustria (Industry—the press organ of heavy industry), Uchutelslaya Ga.eta (The Teacher's Journal), and the newspapers issued by the People's Commissariats and trade unions of Water Transport, Finance, Aviation, Light Industry, the Food Industry, Agriculture and the Timber Industry

The Red Arm) and the Red Navy have many newspapers of their own Besides the central papers, Kraismaya Ziezda (The Red Sar) and Voyenno-Morskin Flot (The Navy), there are numerous arms, army corps, divisional and brigade papers, many of which originated in the days of the Civil War

There are 3.993 local newspapers published in the various districts of the USSR with a total circulation of 6.000,000 copies

The larger industrial establishments, institutions and State farms seuic their own newspapers. These appear either every other day or once a week, and the carculation of many of them runs into tens of thousands. There were 4604 such newspapers in the various factories. State farms and machine and tractor stateous in 1932.

The smaller industrial establishments and institutions, and the collective farms, schools, Lectory shops and rest homes put out will messpapers (the articles being either written by hand or typewritten) which treat of the life of the establish ment or institution and fight for improving production, raising the cultural level of the workers, etc. The indulge extensively

- ', criticism aimed at improving production. As the ger establishments also have a wall newspaper for every department, the total number is indeed enormous
- 2 There are also many "traveling" newspapers, newspapers on wheels During the spring sowing and autumn har versing, minature parithelps mounted on trucks and equipped with radio receiving sets go out into the fields where the fight for high harvest is being waged. They are the "travelling" headquarters of some newspapers. News items about Stakhanovite records in the fields, about the results of Social-tooppetition among the tractor brigades and on the amount of work done by the harvester combines, as well as articles on the shortcomings of the work, written by the collective striners themselved, are printed in the paper the very same day, together with the foreign and domestic news picked up on the radio on the radio on the radio.

The 1,880 periodicals published in the U.S.S.R. have a total annual circulation of 250,000,000 copies

3 The tremendous interest of the millions of Soviet working people in political questions and their eagerness to get a thorough political education has led to a colossal growth in the publication of the classics of Marxiem Leminsm. In the period of 21 years from 1917 to 1938 a total of 305,400,000 copies of the works of Marx, Engels, Lemin and Stalin were published in the USSR and those of Saltykov Schedetin, the famous Russian saturist, in 5,537,000 copies, which means 30 times as many before the Revolution.

There is probably no better way to gain a swift understanding of the many-sided growth and great cultural achievements of the Soviet Union than to examine and survey its recently published books. The publication of literary works has increased more than sevenfold (15,900,000 copies in 1913 and 117,900,000 copies in 1937), books on agriculture almost eightfold (3,000,000 and 23,200,000), books on social seeince and political works seventeen times (17,700,000 and 303,600,000) and technical books thenty seven times 2,200,000 and 59,400,000)

During the three years, 1935 1938 alone, among the great Southers there were 9,151,612 copies of Maxim Gorky's works resued in 49 languages in the USS SR, 2,556 855 of the poet, Vladimir Mayakovsy's, and 1,533,210 of Sholom Aleichem's Alexer Totstop, the author of Bread and Peter the Great, and Mikhai Sholokhov, the author of Bread and Peter the Great, and Mikhai Sholokhov, the author of And Quiet Flows the Don and Virgin Soil Upturned, have been honoured through heng elected members of the Supreme Soviet of the USSR During these three years, 2,656,870 and 2,660,530 course of their works, respectively, were nothished

Pre revolutionary Russian writers are also widely read During the same period, 7,874,857 copies of Leo Toletoy's works were published in 42 Janguages, 5,185,700 of Chekhov's in 41 Janguages, 4,120,772 of Turgenoy's and 2,765,165 of Gogl's Most vensational of all, however, was the publication of 13,000,000 copies of Pushkin's works in 61 Janguages during the single year 1937 in connection with the celebration of liss centennial. This however was only a little over one half of the 23 million copies of his works which have been published since 1917.

Not only are the books of Soviet and Russian authors given an enormous distribution, but many a European or American author has had more copies of his books published in the Soviet Union than in his native country. Among the "Luropean writers, 1510,312 copies of Romain Rolland's works were published during 1935 38, 918,330 of Henri Barbusse's, 521 083 of Emile Zola's 1,139,340 of Loin Feuchtsangers, 639 050 of Heines and 492,835 of Shakespeare's Among American writers, 1,549,390 copies of Mark Twain's books, 1,439 975 of Jack London's, 3,00,000 of O Henry's and 100,000 of Hemingway's were published during these three years.

4 Equalty noteworthy are the figures illustrating the increased publication of books for children. The total number of these published in 1913 was 6,550,000, by 1937 this figure had swelled to 66,396,000, that is, had increased tenfold. Special newspapers in the various native tongues are usued for children. The most popular children's newspaper—the Pionerskays Prawde (The Pioneer's Truth) has a circulation of 900,000.

Many Soviet children's writers are enormously popular of During 1935 38, for example, 7,511,931 copies of the children's poet, Samuel Marshak's works were issued in 41 languages, 6,131,838 of Korme Chukovsky's, 5,215,110 of Agnya Barto's, and 1,263,110 of Mikhail Ilifia, the author of New Soviet Primer and Men and Mountains During 1937 as many as 66 million copies of children's books and 118 million copies of fection and poetry were published in the U.S.S.R.

5 It is always a little difficult to grasp the astronomical character of Soviet statistics. It is difficult, for instance, to visualize 118 million volumes and to think what they mean In terms of cultural achievement to a country which was largely illiterate twenty years ago. It is equally difficult to understand that these volumes comprise only a fraction of all books published in the Soviet Union. Since 1922, at least, half a billion or more copies of books have been issued

each year in the Soviet Union the number for the single year 1937, totalling 673 500 000 If one compares Soviet figures in Socialist Construction in the USSR with those for America in the 1939 World Almanac, one finds that in 1936 while 10 436 new tiles and new editions together were published in the United States 43 340 titles were published in the USSR of which 11 696 were published in the USSR of which 11 696 were published in the USSR of which 11 696 were published in the USSR of which 11 696 were published in the USSR of which 11 696 were published in the USSR of which 11 696 were published in the USSR of which 11 696 were published in the

6 Under Souset rule the printed u ord has penetral ed the remote parts of the east territory of the USSR Newspapers are being published in To languages and books in 111 languages of the peoples of the USSR, of whom 40 have developed written alphabets only since the Cetcher Resolution.

Newspapers, books and periodicals are so priced as to be within the means of every Soviet citizen It is the aim of the Soviet press that every issue should help to popularize advanced ideas to encourage the public spirited workers in all spheres of labour, science and culture, reveal any short comings there may be on one or another sector of construction of the new Socialist life, flail and ridicule all bureaucracy and redtage and expose the spies and saboteurs sent into the USSR by the fascist countries. In all its activities the Soviet press is guided by the aum of building classless society. in which labour productivity will reach such a high level as to make possible the realization of the principle 'From each according to his ability, to each according to his needs", that is, towards the achievement of Communist society, to wards the realization of the dream of the finest minds of humanity

The Soviet press maintains the closest contact with the masses Besides their huge army of trained professional

valists the 8,550 newspapers published in the USSR receive contributions from more than three million factory and village correspondents

a The factory and village correspondents are reporters of a special type, a specifically Source type. They are correspondents who voluntarily undertake to contribute articles to the press on the achievements or shortcomings of the industrial establishments or institutions in which they work, or the collective farms of which they are members. They initiate public discussions on various questions pertaining to Socialist construction give publicity to good work and call attention to instances of noor work in the Siste or economic apparature.

7 In any assue of any Sowet newspaper you can find articles and news items signed by workers employees teachers, collective farmers and other public spirited citizens, critical ing some shortcoming in this or that branch of economy or administration. Quite often you will run across a news item written by some geologist reporting the discovery of new mineral deposits or an article by a factory engineer submitting a proposal for improving work or ealting for the organization of a new branch of industry, or a letter from a botanist who has evolved a new variety of plant.

A constant stream of such letters, news items and articles written by workers collective farmers and intellectuals pours not the thousands of Soviet newspaper offices daily and even hourly Praida, the organ of the Central Communet end the Communet Party of the Soviet Union (Bolshevis), receive as many as 300 such letters in one day Uchitelikaya Gereia, the organ of the People's Communsariats of Education of the various republies and the teachers' union, receives from 4,500 to 5,000 letters a month from its readers in the editorial offices every letter is given prompt and thoughtful attention

A great many of the letters are published, but lack of space nuckes it impossible to publish them all linewer, measures are taken with regard to each letter—whether published or impublished to satisfy just grievances and eliminate irreguvarities. The Soviet authorities lend an attentive ear to the sore of the press and quickly react to any warming signals at may sound.

One of the fundamental principles of the Sowict press is criticism, regardless of person. In other words, anyone, no matter what post he may hold, arrespective of his status, may be subjected to oral and printed criticism or any fault he may have committed. Criticism aids the Bolisheyik Party and the Soviet Government to disclose mismanagement and mertness, and to correct all kinds of deficiencies in the shortest nosphle time.

The citizens of the USSR freely state in the press their opinions on any economic or political question. When necessary they demand an explanation from the bead of the industry or the State apparatus in question. Thus for example, the leading newspapers have published questions addressed by individual citizens to various People's. Commissars, among them the People's Commissars of Foreign Affairs. And each of these inquiries received a full reply, also through the press.

8 The workers correspondents carry on a vigorous, per ustent campaign against bureaueracy and against violators of Socialist labour discipline, nagehogs, sidlers and other adisorganizers of production

The Soviet press maintains various forms of contact with its readers. Apart from extensive correspondence, there are well prepared meetings between groups of readers and newspaper staffs for the purpose of discussing problems and

ng opinions For example, the editors of Machinos (Machinos Building—the official prees organ of the People's Commissariasi af the Machine Building Industries) arranged a meeting to January, 1938, with the engineers and Stakhanovite workers from the machine building plants Seven hundred of its readers discussed with the staff the experience gained by the Kuibyshev Plant in Kolomna—one of the largest machine building works in the USSR—in mastering the new technological processes. The readers suggested to the editorial board how best to continue the papers drive for introducing and mastering these processes.

In preparation for the new school year of 1938 39 Uchitelikaya Gazeta held a conference with teacher members of the Supreme Sowet of the U.S.R. Among those present at the conference were teachers from the republics of non Russian nationalities. Georgia, Armenia, Kazakhstan and others. The outstanding teachers here assembled advanced concrete proposals for improving public education. According to their general policy the educts of the newspapers carefully noted these suggestions and advocated their adoption in the columns.

At the conclusion of the first term of school this news purpose of the transparent public educational bodies had functioned during that period, again mysted a group of readers—this time village school teachers—to the editorial offices— This particular meeting between the editorial staff and the readers was attended by M. I. Kalimin, President of the President of the Supreme Soviet of the USSR who took an active part in its business.

9 The editors in-chief of newspapers as well as the associate editors receive visitors daily and listen attentively to what they have to say This practice extends the newspapers contact with their readers Each year from 17,000 to 18 000 visitors call at the editorial offices of Pravda More than twelve thousand call at Izvestia

It has become a tradition for all Soviet newspapers to hold readers conferences at which the editors give an account of their work to their readers. Eight hundred readers took part in the readers' conferences held in 1938 by Sotsialis inclessive Zemledeliye (Socialist Agriculture), the pressorgan of the People's Commissariat of Agriculture and of the trade unions of the agricultural workers and specialists of State farms and machine and tractor stations. The same vear the editor of the Moscow regional and city newspaper Moshousky Bolshevik (The Moscow Bolshevik), reported on the newspaper's work to 2,000 readers.

All these measures promote close contact between the newspapers and their readers help the newspapers to become true servants of the people and make it possible to raise issues promptly and effectively

Soviet newspapers came into being when street fighting against the defenders of the old order was still going on The Soviet press of that period roused the workers and peavants to fight against the republic's domestic and foreign camenes, propagated the slegams of the Soviet Government and scathingly denounced the deserters, self-seckers and

profiters

With the conclusion of the Civil War, the Soviet news papers deducated their columns largely to other problems is Besides dealing with the questions concerning the political education of the massess, they focussed attention on the economic and cultural development of the country

In the USSR the press must be a propagandist, an agutator and an organizer—that is how Lenin formulat uts tasks. Here are a few examples illustrating this conception

During the years devoted to carrying out the first two Fine Year plans, Stahn's alogans about mastering the new industrial plants and the new technique were particularly popular. The Soviet press eagerly took up these alogans Correspondents from Praude, Izvestia and Industria, working in groups at the large industrial enterprises, did yeomen's service in making these alogans effective.

The Soviet press also plays a prominent role in spreading the Stakhanov movement

'I remember," writes Alexei Stakhanov, the famous coal unner who inuited this remarkable movement, "that seeing my record featured in the press spurred me on towards new achievements in the field of labour productivity. The press must be given credit for the efficient way in which it brought my experience to the knowledge of my fellow workers in other times. As a result the Donate coal fields, which used to give the country 140 000 150,000 tons of coal a day now stoduce mere than 200,000 tons."

Newspapers hate become indispensible in the daily life of the Soviet cuizen. They appear everywhere—in the Caucasian aul, the Uzhek Kishlak, the mountain hamlets of the Pampir and in the writering places of the arctic explorers on Novaya Zemlya. They are issued in Ractories and missin in universities and colleges, in Red Army units, theatres mines and submarines. Engineers and artists, actors and bakers, architects and deep sea diverse, writers and sailors, aviators and printers, bank employees and coal miners all have their own regularly printed previouspers.

In the mountains and in the desert sands, in the zone of eternal frost and in the aubtropies, the first thump of the labourer's shovel is answered like an echo by the click of a portable press, already busy putting out a newspaper for the inhabitants of cities to be while they are under construction

The first issue of Na Zashchitu Rodiny (in Defence of Our Country), put out by the men of the Red Banner First Detached Army, appeared at Lake Hassan in 1938 in the days when the Japanese aggressors were staggering back across the border Just before going into battle the Red Army men published the Ataka (Attack), a special issue of their wall newspaper

10 "The press," says Stalin "is the only instrument whereby the Party can speak daily in the interests of the country and its citizens It was through the press that the Soviet Government submitted the draft of the Constitution of the USSR-the fundamental law of the State-to a nation wide discussion The Government Constitutional Commission made a thorough study of all amendments to the draft suggest ed by the estizens of the Soviet Union and published in the press Stalin, the chairman of the commission, earefully analyzed these proposed amendments in his report at the All Union Congress of Soviets A number of them were accepted by the Congress and duly incorporated in the text of the Constitution of the USSR

In 1937 and 1938 an enthusiastic eampaign that stirred the whole country ushered in the elections to the Supreme Soviet of the USSR and the Supreme Soviets of the Union Republics The Soviet press played no small role in cam paigning for the candidates nominated by the Communist and non Party bloe to the highest organs of State the land of Soviets The papers were full of

forward stories sent in by ordinary Soviet

out the life and work of the candidates from first hand knowledge One factory newspaper Udarnik Metallostroys (The Metal Construction Shock Brigader) printed side by side an election campaign speech by Professor Mysh, a physican then candidate for the Supreme Soviet of the USSR and a letter from a certain Contrade Petrakova whose life he had once saved Petrakova wrote that Professor Mysh loved his fellowmen and loved and knew his work" And this was the best recommendation any candidate could wish for

A Moscow factory paper Za Sovietsky Podshipnik (Soviet Ball Bearings) serving the Kaganovich Ball Bearing Plant conducted an interesting and convincing campaign in support of Comrade Pichugina formerly worker of that plant, running for the Supreme Soviet of the USSR In a few short years Comrade Pichugina, like so many others in the Soviet Union had made much headway in life Starting out as an unskilled worker on the plant's construction site, she had become a highly skilled mechanic It was she who assembled the first Soviet ball bearings. She was also a prominent figure in public life, having been elected chairman of a district Soviet in the city of Moscow In espousing the andidature of this true daughter of the people, the newspaper showed that the road traversed by Comrade Pichugina was typical of many gifted people who had formerly been brow beaten and stifled by Tsarism and had found application for their abilities only under the Soviet system Workers foremen and engineers as also housewives who had occasion, to meet her in the course of her public work and collective tarmers from her native village, contributed articles and personal items about her in the factory newspapers. And every line the was convincingly simple and true to

The draft of the Third Five Year Plan for the development of the national economy of the USSR was likewise widely discussed in the press

Any useful new enterprise, whether in production, science or art, is promptly taken up by the press Oustanding men in the field of production, the Stakhanovites, are frequently featured in its columns Their methods of work are described in great detail for emulation by others

It is customary for the Soviet press to give brief statistical summaries daily on the state of the current agricultural work (ploughing sowing, reaping, etc.) on the day's output of coal, iron steel and automobiles, and the figures for carloadings. These data are of absorbing interest to the Soviet reader, which is but natural, for steel and grain, coal and machinery, are the leading items that go to make up the national wealth which ensures the might of the USSR

11 The Soviet press has grown to be a gigantic force which actively manifests itself in absolutely all spheres of eco nomic construction and cultural development in the land of Socialism Some of the country's finest people, the ablest representatives of the Soviet intelligential, are engaged in newspaper or literary work.

All these people, as well as the professional journalists, enjoy the esteem of the Soviet reader Many Soviet journalists conduct an extensive private correspondence with their readers. The masses know them, come to them wêque-tions, seek their advice and assistance. There is the closest conduct between writer and reader.

The Soviet Government and people put a high the work of the representatives of the press of by order of um of the Supreme

USSR, 172 Soviet writers were decorated with tokens of distinction, including the highest-the Order of Lenin and the Order of the Red Banner of Labour A number of Soviet men of letters Alexes Tolstoy, Mikhail Sholokhov and others,

have been elected to the Supreme Soviet of the USSR.

All this testifies to the important part which the Soviet press is playing in the life of the country and to the honourable position which pressmen hold among the working people of the Soviet Union

# MOTION PICTURE-ART AND INDUSTRY

#### EX

# PROF S EISENSTEIN

I Help and advice 2 Cursons incident. 3 Public interest in films. 4 Lenin's & Stalin's patrenage. 5 Film in remote content. 6 Youth's ambition. 7 Initial struggle & development of film industry. 8 Children's films. 9 Cameraman's role in topical films. 50 Institutes for training & creatch. 11 Concidences of art & real life. 12 Awards & carters for film people. 13 Themes & motto of Sovet films.

We say that the screen is of all arts the most popular in the Soviet Union not for the sole reason that it attracts inillions of people to the picture theatres but because of the great public interest displayed during the actual production of films

1 When the newspapers reported that my studio group was to start work on "Alexander Newky" thousands of people wrote to me with helpful suggestions and valuable historical data besides recommending original sources. This was not en isolated case. Other men in the film world have had smill experiences, notably the Vassilier brothers who made "Chapaye" and Michael Romm the producer of Lennin October and Lennin in 1918. "Participants in the revolutionary events of 1917, old partisans, men who had served in the Chill War, sent their diarret, photographs and various documents relating to the first years of Soviet power. Many

easy one for the actors have merely to impersonate them

their older brothers their fathers and comrades. There are other parts, however that do not come naturally to Red Army men—then things are liable to go wrong

In the film Volckayeus Days the brothers Vassilev attempted to reproduce an actual episode of the Civil War The partisans had watered the slopes of a steep hill in mid winter to make their position inaccessible to the Japanese involvers. The producers did the same thinking that the iey slopes would baffle the Red Army men (dressed in Japanese uniforms) as they had the troops of the Mikado. However, when the men heard the world of command not knowing what was in the minds of the producers they set about the job in real earnest and reached the top. The scene had to be taken all over again.

3 I have already noted the great public interest diplayed during the actual production of films. When a moring pacture is released the public gives its impairial and discriminating opinion. Faults are severely enticised achievements warmly eneouraged all in the friendly spirit of people who are interested in the progress of art and feel a moral responsibility for the quality of Soviet films.

Such is the organic nnion of the Soviet people with Soviet art and the servants of art who in their turn draw their inspiration from the masses

The Soviet Government is a great patron of the arts and the people engaged in them providing every opportunity for the development of individuality and artistic talent

4 Much attention is paid to cinematography During the Civil War great importance was attached to the development of the film industry in the young Soviet Republic That was the time when Lenin himself declared that the motion picture was the most important of the arts to the Soviet State

Since then the Communist Party and Joseph Stalin personally have been constantly promoting the development and improvement of Soviet cinematography

The motion picture has become a prime cultural neces sity to the Soviet citizen. The best films are distributed by thousands of positive copies and shown everywhere, not only in the big modern theatres in the cities and the cinemas in the countryside, but in clubs, the apartments of our Stakhanosites and other people of note. They are shown to collective farmers far out in the fields to army and navy men and passengers on shows at see.

5 Then there are the travelling conemas employing a great army of operators equipped with portable projectors. They show films in the most remote corners of the country, the Siberian forests, the Alpine meadows of the Caucasus the villages of Turkmenia and Tapkistan and the suls (native villages) of Karakhitan.

To the far northern districts new pictures are delivered by air. The operators there take them on their itineraries by dog or reindeer team. In Yakutia, for instance, one operator recently made an interesting tour by dog team. In a few months he covered about fifteen hundred miles and demonstrated his films in slif the wintering eamps on his route. But , this, of course, is an exception

Travelling cinemas are generally installed in motor vehicles of the latest make. Among them are a fair number of the new outfits which show films out of doors in broad daylight. Considerable attention was paid to the question of motion tures as an important department of cultural development during the discussion on the Third Five Year Plan at the Eighteenth Congress of the Community Party Provisions were made for a say fold interesse in the number of sound picture installations by the end of the Third Five Year Plan in 1942.

The immense popularity of the best screen actors and producers is shared by the betroes they create If one were to speak of the fearless light hearted brave; joung man of our age, boldly overcoming all difficulties, one would in voluntarily temember the young Bolshewk Maxim, of the screen trilogy "Maxim's Youth Moxim Returns and the Vibors Side" Maxim has become a household word

6 To become heroes like the commanders Chapayev and Shoors, to emulate the men of the past and present of our country, is the cherished ambition that the screen has kindled in the hearts of all our children

I have been told that after the release of my film "Alexander Newshy." showing the struggle of the Russian people against the German invaders in the thirteenth century notably the famous battle between the Russian cohorts and German kinghis fought on the new of Lake Perpus, there was a run on paper clips in the stationers' stores. Children were buying boxes of paper clips by the dozen to make chain mail as worn by Alexander Newky. Every day, after school young saviours of Russian armed with ply wood shields and broom stick lances would drive the Teuton invaders from their feountivards.

The most popular films are those which show Lenin and Stalin, the leaders of the masses Such are the pictures "Lenin in October, Lenin in 1918" produced by Romni, the

"Great Dawn" produced by Chiaureli, "the Man wit; the Gun" produced by Yutkevich

The Soviet picture goer also admires the outlanding sentratists of the West Charlie Chaplin, for instance, is enormously popular in this country. The film of this great star are shown with unfailing success in all parts of the country, and the recent celebration of his fiftieth birthday aroused warm public interest.

7 Twenty years ago, encircled by a ring of enemies, extracted by blockade and famine, the Soviet country began to develop its motion picture industry. The first Soviet Plins were made in unheated studios by half starved people, whose enthussam made up for the shortage of apparatus, film and other accessories.

Before the Revolution in Russia there were private film studios very primitively equipped. They competed success fully with the foreign studios but we must admit that only a small number of the pictures released in those days had any artistic ment.

The motion picture as an art developed only after the Revolution. The first Soviet films were propaganda films for the men at the front Excellent news regls were made although the cameramen had only exteps of film with which to capture the unique events of those glorous days. These films are now treasured as invaluable documents showing the exploits of a nouele fishing for freedom and happiness.

Very often cameramen had to work under fire They shared the rigours of life at the front and followed the troops noto attack One of these cameramen was the now famous Tissch Another nos the equally Iamous Yermolov, who later took part in the production of the screen trilogy showing the life of our great Bussian nutter, Visian Gorky

The motion picture has kept pace with the general development of our country in culture

The Five Year Plans created a substantial technical base.

The Five Year Plans created a substantial technical base for the industry. The Soviet Union now produces its own film in large quantities. Several large plants have been built for the component of moving picture theatres and studios.

Fine studios have been built in Moscow, Kiev, Minsk, Tbillissi Leningrad and elsewhere The Soviet newsreel service has branches in all the main cities

Under Soviet rule the non-Russian republics too Fave developed film industries for the first time. The picture goess of the Ukraine, Georgia Byelorussia, Armenia, Azerbasjan, Turkmenia, Uzbekistan and Tajakistan see films with the dailogue in their own alonguages. These films are made by their own nationals.

- 8 A special studio in Moccow is producing children's films, which are shown at special picture theatres and have considerable educational value. Children waiting in the foyers have all kinds of toys to play with and special attendants to entertain them with talks or games. These theatres work under the supervision of educational experts. Children who appear on the screen (for instance, the schoolloy Lyarky, who played the part of the young Maxim Gorky in the films "Gorky's Childhood and among Men." do not become third produptes, they must continue their studies, attending the usual schools, and they are not allowed to take part in any flim production unless they have excellent marks at echool
- 9 The cameraman penetrates all spheres of hie in the Soviet Union, on land and sea, and in the air and under the water, recording hie and society in the first Socialist State of workers and peasants in the world

You will see the cameraman at sessions of the Soviet Parliament—the Supreme Soviet of the USSR, you are bound to see the cameraman when new industrial guants are being inaugurated, such as the Diseiper Hydroelectric Power Station or the Magnitogoris Steel Mits Notting new escapes the all seeing eye of the camera. High tribute is due to the crew of the cameramen who filmed the construction of the great hydroelectrical power station on the Diseiper They lived there all the time from first to the last day, record mg the day's work of the budders with its efforts and herossin

In the same way the cameramen followed the construction of the Moscow Volga Canal and other big Soviet developments

Not long ago a newsteel man was one of the crew during a flight into the substratesphere. The serial shots were done brillantly The operator photographed the start, several episodes in the flight, the parachute jumps and the landing of the halloon

A diving hell is lowered to the hed of the sea. Inside it is a cameraman wearing a diving costume. His apparatus is enclosed in a watertight metal box.

Cameramen acompany the heroes of our country on the most arduous expeditions, clumbing with them mountain peaks where foot never trod, landing with them on the roof of the world

The heroes of the famous drifting expedition from the North Pole to the coast of Greenland took a movie camera with them and made good use of it as they were horne along by the ocean currents they were the first to trade on the map. The nefloc ended its drift not far from the shores of Green land. Before the scentists were taken off the are they were

projeted by the Polar firer Vlaccov. When the airplane lauded on the see near the camp the first man Vlassov saw was Papanin himself taking a picture of the arrival of the guest from the mainland

10 Producers, operators, scenario writers and studio acties are trained at the State Institute of Cinematography in Moscow This Institute has specially equipped laboratories, demonstration halls, studios and a collection of practically all the films that have appeared on the screen anywhere. The unflux of students as so great that a new extension is being made, equipped with the most up to date motion picture technique. This Institute is the first of its kind in the world to be statted about fifteen years ago.

The doors of the Institute of Cinematograph, are wide open to talented jouth. As in all colleges in the Sowet Union the Institute's training is free of charge and the students receive a regular allowance from the State. After graduating from this institute they go to the studios where, after a trial period, they are given now to do on their own responsibility.

Motion picture technicians are trained at another justitute in Lenngrad. A third institute in Moscow, conducts research on the problems of stereoscopic films and the improvements of cameras, projectors, and films.

11 It is curious how art and real life have their coince ances. A lew years ago in that remarkable film Deputy of the Baltic, the actor Cherkassov played the part of the professor who was elected to the Petrograd Soviet by the sailors of the Baltic Fleet in the early days of the Revolution. And not long ago, in 1938, this talented representative of the Soviet intelligentias, Cherkassov ass himself elected from a Lenin grad constituency to the Supreme Soviet of the Russian Soviet Federated Socialist Republic

Cherkassov is no exception There are quite a number of convex people among our statesmen For instance, the fine producer Chaureli, the working people of Georgia elected him to the Soviet parliament, the Supreme Soviet of the USSR

About two hundred people in the film industry have been given the highest award—an order of the USSR. The producers Dovzhenko, Pudovkin, Kozynisev, Trauberg, Chiaurch, Alexandrov and others wear orders as distinguish ed citizens of the Soviet Union. The Jamous secreta extress Orlova has been decorated by the Government with the Order of Lenin and the Order of the Red Banner of Labour.

12 The celebrities of Sowiet screenland, even its doyens, are young in years. Their average age is probably helow forty. The producers of the Maxim trilogy Koxyntsev and Trauberg began their career when they were hardly out of their teens the producer Trauberg produced the "Blue Express", shown all over the world, when he was only twenty four. This is because our young scenario writers, actors and producers easily receive opportunities to display and develop their talents. The careers of Sowiet film people depend only on their capacity, their ability to create first class works of art.

13 Extraordinarily wide 18 the range of themes and genres that Soviet einematographists are working on now Epies and eccentrie omedies, dramas and fables adventure films and pictures for children, aimmated cartoons and puppet films, the combination of the aimmated cartoon with living actors, etc. The film studies of the Soviet Union are making films on the Stakhanov Movement, Socialist construction and the mutual friendship of the peoples. Classical literature too is being put on the sereen.

Not to rest content with present achievements is a motta film workers share until all other people in the Soviet Union. They are constantly strong for improvements, containing the search for new methods of cinematic expression, ever mindful of the three essential clientist of Soviet art, realism psychological sight, ideological stenkennee.

The virtue and aignificance of Soviet cinematography is that it gives a true portrayal of hie in our Soviet country and has really become, of all arts, the closest to the masses, that it is actively contributing to the further consolidation of our new system of society, that it has a great formative influence on the minds of the Soviet people. To this is due its immense popularity among the peoples of the U.S.S.R., their high opinion and encouragement of the art.

# EMANCIPATION OF THE PEOPLE

#### BY

#### P KOVARKAK

- z Collectivization. 2 Laboratories 3 Record yield
- 4 Women's flying record. 5 Women deputies.
  6 The change

Under the government of the Tsars the peasants of Russia were kept in a state of signorance and darkness. Pobedonostsev the Procurator of the Holy Synod, once declared cynically "Illiterate people are easier to rule." On landlords' estates farm labourers worked as much as seventeen and up to two though hours a day. The peasant who worked on his own farm was usually busy 15 16 hours a day. Practically all the peasants were illiterate.

The October Socialist Revolution emancipated the pea sants of Russia from the yoke of the landlords and capitalists, and put an end to their poverty and ignorance

1 The profoundest change in the life of the Soviet peasants was wrought by collectivization. By joining the collective farms the peasants who formerly could scarcely afford even a plough, have become partners in large-scale and powerfully equipped agricultural enterprises. The eristwhile poor peasant whose lifelong dream was to obtain a horse now operates harvester combines, is in charge of thousands of acres of land, and handles accounts running into hundreds of thousands and millions of roubles.

The economic life of the countryside has changed, and with it its cultural aspect. The collective farms use the most up to date agricultural machinery and apply modern secunific methods of farming. The productivity of their labour is steadily using. Their output is constantly increasing, and their wealth is growing. On January 1, 1939, the deposits of the collective farms on their current accounts in the State Bank aggregated 2,519,200,000 roubles, as againd 1,509,000,000 roubles on December 1, 1937.

The collective farmer spends about two thirds the time the individual peasant has to spend in work on his small farm, and yet produces twice as much as the latter

The use of machinery and the rational organization and acceleration of the various processes of agricultural production have lightened the labour of the collective farmer and created the conditions necessary for study and recreation

The Soviet Government spares no means or efforts to improve the well being of the collective farmers and to raws their cultural level. In the whole of Tarist Russia there were altogether 222 popular recreation centres, and even these led a miserable existence, whereas fully 88,000 clubs and 56,000 libraries function in the rural districts of the Soviet Union.

In the villages of Tearst Russa the land was tilled widprimitive implements, such as were used in the Middle Age. Naturally, there were no tractor drivers, combine operators, or chaufleurs in the villages of Tearst Russa. The only mechanic was the black-mith, one to a village or, somements one to two or more villages. One or two agronomasts service a whole country. And not every village by far had a teacher

Between 1934 and 1937, 1,419,000 tractor drivers, combine operators and chauffeurs were trained in the U.S.S.R. for work

in the countryside. In 1938 alone, 31,700 agronomists, melio ration experts, stock breeding experts and surveyors—all university or high school graduates—were sent to work in the collective farm villages.

Various courses of study are held in each village, in each collective farm, and in each collective farm brigade In Nikolayer Region, for instance, there were 20,000 collective farmers in January 1929 who studied scientific agricultural and stock breeding methods under the supervision of expert instructors, and thousands of others attended special schools for tractor drivers, combine operators, chauffeurs and drivers of Diesel tractors

2 The Soviet countryside is covered with a wide net work of laboratories carrying on scientific work, experiment ing and producing new varieties of plants. The collective farm villages have given the country a number of scientists who are contributing their valuable discoveries to the science of agronomy T Lysenko formerly a peasant of the village Karlovka, Poltava Region, is today a member of the Academy of Sciences of the USSR, and President of the Lenin Academy of Agricultural Sciences It was only after the establishment of Soviet power, that T Lysenko received higher education and took up scientific work Thousands of collective farmers helped Lysenko in his experiments, which he carried out on collective farm fields. With the assistance of these collective farmers, Lysenko elaborated the theory of the stages in the development of plants which served as a basis for the intro duction of his scientific method of varovization-or 'vernal ization' -of seeds In 1933, yarovized seeds were used to sow 491,000 acres of land, and in 1937 they were used on 22,230 000 acres Seed yarovi-ation has increased grain har sests by millions of tons

Lysenko has many followers and students who are continuing their teacher's hold experiments

One of his followers Malisev a member of the Zavyety Hyrcha Collective Farm in Shadrunsk District Chelyabinsk-Region has been carrying on important scientific research work in the farm laboratory. He travelled over a thousand miles to visit Lysenko a Institute of Selection and Genetics in order to get advice on the proper organization of scientific work in the collective farm laboratory. Malisev succeeded in obtaining about 2000 ears of Multium 221 wheat for the production of a new variety insuring a high harvest yield. This collective farmer has already schieved important results in his scientific investigation.

A new variety of highly productive wheat has been obtained by the collective farmer Syrovezkin member of the New Life Collective Farm in Dmitrov District Moscow Region

Another collective farmer P Ya-kin of the Veysse Collective Farm in the Mordovian Republic, has achieved extrahigh harvest yields of wheat and hemp as a result of his untiring experimentation. He has established contact with the foremost senemus and visited many collective farms lecturing on his experiences and methods of obtaining higher harvest yields. Yashin enjoys wide popularity and has been elected Deputy to the Supreme Soviet of the USS R.

3 Yefremov, a member of the Iskra Collective Farm in Byeloglazovsk District, Altar Territory, is the amintor of a mass movement for record harvests in Sthera. In 1936 he obtained a yield of 24 toos of summer wheat per acre, further improving the results of his agronomic methods in 1937 and 1938. Sergesva link leader of the Politicaled Collective Farm

in the Andreyev District of the same Alta Territory, obtained on her section a yield of 285 tons of wheat per acre. This record was bettered in the same Alta Territory by Popenko, link leader of the Red Partisan Collective Farm in Slavgorod District, who obtained on his section a harvest of 3 tons per acre.

A text book prepared by Yefremov in collaboration with a friend, the Stakhanovite Chumanov, will shortly be published in the Altai Territory The people of Siberia elected Yefremov Deputy to the Supreme Soviet of the RSFSR

Until quite recently many scientists considered a harvest of 12 to 16 tons of sugar beet about the maximum obtainable per acre. Manu Demechanko, a peasant gult, member of the Commtern Collective Farm in Kiev Region, had her own opinion on the subject. She worked enthussastically studying the soil and the effect of various kinds of fettilaers on the harvest yield of sugar beet. As a result she achieved what had seemed impossible, obtaining a thartest of 212 tons of sugar beet per acre. Demchenko's example was followed by tens of thousands of sugar beet growers in other collective farms has the proposed of the superior of the superi

Demchenko's methods have been undely popularized by the press, as well as by college professors and agronomists. For several years now the Soviet Union holds first place in the north in the output of sugar beet

Demchenko is now studying in an agricultural college. She has been decorated by the Government with the Order of Lenin, and the people have elected her Deputy to the Supreme Source of the USSR The name of Angelma, another woman collective farmer, is also widely known throughout the Soviet Union. She comes of a Greek family of poor peasants. After graduating a school for tractor drivers, she organized women tractor brigades in the Staro Beshevsk Machine and Tractor Station in Stalin. Region Angelma's brigade displayed remarkable skill in the utilization of tractors, covering 3 937 acres per tractor in a season. Today there are thousands of women tractor brigades working in machine and tractor stations and on collective farmers have been setting high records for har vesting with combines. Angelina has been decorated by the Government with the Order of Lenn. She is a Deputy to the Supreme Soviet of the USSR and is now studying in the Academy of Socialist Agriculture.

New names are being added daily to the list of heroes and herours of the collective farm fields. Oskin a Stakhanovite combine operator of the Ural like Machine and Tractor Station in Chkalov Region, working with his brother, also a combine operator on a pair of Hichede "Stalinetz" combines, harvested 13,155 acres in the season of 1930. A number of improvements suggested by Oskin have been introduced in the manufacture of combines.

4 Last year three women flew in a seaplane over the land route from the Black Sea to the White Sea, covering a distance of 1,500 miles. The seaplane was piloted by the woman flyer Ossipenko of the black Collective Farm in Berd yank District, Dinepropertorsk Region. Shortly after that, Ossipenko, together with two other women flyers, Grizodubova and Raskova, made a non stop flight from Moscow to the Far East in the airplane Rodina establishing a new women's contentional distance record.

5 The status of peasant women in Tsarist Russia, particularly in the national border regions, was actually that of slaves. In the Soviet Union with men, participating in the construction of socialist economy in the advancement of culture and in the advancement of culture and in the advancement of culture and in the advancement.

There are 189 somen Deputtes in the Supreme Sowet the highest organ of Government authority—of the USSR Many of these women deputtes are members of collective farms where they work as milkmands, tractor drivers, combine operators, etc.

Farajeva—today Peoples Commissar of Public Health of the Azerbaijan Republic—was formerly a collective farmer of the Azerbaijan Republic—was formerly a collective farmer to a Medical Institute from which she graduated with honours and received her doctor's diploma Subsequently, Farajeva displayed extraordinary talent as a feader and organized.

6 Before the Revolution there was practically no intelligents in whatere in the villages Today the doors of schools, universities and academies are wide open to the peasants Take, for instance a typical village—Lokasheika, in Monasty inche District Vinnities Region During the period of two Five-Year Plans from 1929 to 1937, this village gave the country 48 teachers one railway engineer, three flyers, one artist, two doctors six agronomists, eight tank operators, one procurator, one assistant captain on a ship, 42 tractor drivers 11 chandleries, four combine operators.

There is a village in the Chuvash Republic, called Tyurleman In the effty years between 1867 and 1917 this village produced three post office workers, three telegraph operators and one medical assistant

During the years following the establishment of Soviet power, 400 peasants of this village have become experts in various lines—teachers, engineers, agronomists, Red Army commanders, foresters, factory directors, surveyors, book keepers, electricians, mechanics, doctors

Collective farmers study foreign languages, music, litera ture. The repertory of the collective farm clubs and theatres includes works of Shakespeare, Mobiter, Punkini, and other classics. Kovalev, a stableman in the Voroshilov Collective Fatm in Voskresensk District, Gorky Region, is the author of remarkable folk tales and byluna (epic poems). He is a recognized poet and has recently been accepted as a member of the Huno of Soviet Witters.

The Dimitrov Collective Farm in the Sorochinisy District, Khristov Region, has a string orchestra, a brass band and a jazz band. They are all conducted by Yoltukhovaky, a member of the Collective Farm. The brass band plays Beethoven's and Tchukovsky a symbolious.

The Moscow State Academic Maly Theatre has a branch in the village of Zametchino Kursk Region. On the other hand, anatteur groups made up of collective Jamres frequently appear in dramatic, opera. dance and musical performances in city theatre.

The present author has also been awarded the Order of the Red Banner of Labour As tractor driver in the Kanelovo Machine and Tractor Station, Krasinodar Territory, I cover in a season 12,350 acres of land, working on a caterpillar tractor I took first place in an All Union contest for the highest rate of tractor tultivation

The working people of the Kuban nominated me as can didate during the elections to the Supreme Soviet of the

USSR, and I was elected Deputy to the Soviet parliament. As deputy I maintain the closest contact with my electors

At present I am studying in the Timityazev Agricultural Academy. My ambition is to become an agronomist, and then a professor. But I have not abandoned my tractor and my Machine and Treator Station. For the summer vacation I shall return home, to my Cossack vallage, where I shall again drive a tractor and do everything in my power to help the young men and women tractor drivers improve their work.

Considering the conditions of collective farm life, there is nothing extraordinary about my career. Thousands of men and women colective farmers are following the same road Emancipated from the yoke of the capitali-is and landlords, and united in collective farms which we the modern machinery, the peasants of the USSR have obtained the opportunity for developing their talents and abilities. Together with other working people, they sit in the highest organs of the Government

Men and stomen who but yesterday were collecture farmers are today members of the Academy of Scences, professors, engineers doors, musicans, orisis, fiyers, Heroes of the Soviet Union, or members of the Government The widest opportunities are open to every citizen of the Soviet Union

PART V SOVIET RUSSIA, 1940-43

### NATIONAL ECONOMY

RV

#### N VOZNESENSK

I Increased output. 2 Capital investment. 3 Pay roll.
4 Railway freight. 5 Agriculture 6 Transport services.

7 Social wealth 8 Cultural progress

The National economy of the USSR as developing systematically in accordance with the laws of extended occalist reproduction which implies, first and foremost a steady growth of production in all branches of the national economy

1 In the first three years of the Third Five Year Plan, the industrial output of the USSR increased from 95500 million roubles in 1937 to 137,500 million roubles in 1940, or by 4 per cent. This includes an increase in the output of the machine building and metal working industry by 76 per cent.

In respect of the output of the defence industry, the Covernment was guided by a simple truth, namely, if you want to be prepared for any "suprases", if you do not want our people to be caught unawares, keep your powder dry and do not staint means on the production of sirreaft, tanks, amounts warships and shells "The output of means of production in industry in 1940 increased by 138 per cent as compared with 1939, and by 52 per cent as compared with 1937. The output of articles of consumption increases an 1940 by 7 per cent as compared with 1939 and by 35 per cent.

as, compared with 1937 The increase of production in the Soviet Union was accompanied by a reconstruction of industry, sepecially of the machine building industry, for the purpose of producing the most advanced and up to date equipment needed by the national economy and for the defence of the country

2 Extended Socialist reproduction further implies a steady increase in socialist accumulation, which is above all apparent in the level of capital investment. Total capital investment in the national economy of the USSR amounted in 1940 to nearly 38000 milton roubles (including about 6000 milton roubles of decentralized capital investment).

During the first three years of the Third Five Year Plant, the volume of capital investments in the national economy of the USSR totalled 108 000 million roubles (including 17500 million roubles of decentralized capital investment)

During the first three years of the Third Five Year Plan Standarty (and including district industry of a local character) was reinforced by the putting into operation of about 2 900 new mills factories, mines power stations and other plants

Let me remind you that throughout the whole period of the first Five Year Plan a total of 1 500 new industrial plants were put into operation in the U.S.S.R.

The effect of the new plant put into operation in the first three years of the Third Five Year Plan has been to increase the capacity of the coal mines by 51 million tons the capacity of the power stations by approximately 2,400,000 kilowatts the capacity of the blast forances by 2,900,000 tons of pig iron, the capacity of the cotton tetrale mills by alsoid, 100,000 spindles besides other production capar.

Extended socialist reproduction in the USSR further implies a steady rise in the material standard of the working people, an increase in their consumption

The ab-olute increase of the national income in the first hiree years of the Third Five Near Plan, calculated at nixe prices, amounted to 29,500 million roubles, the rise being from 96,000 million roubles in 1937 to 125,500 million roubles in 1940.

3 The aggregate pay roll in the national economy of the USSR increased, in the branches of industry envisaged in the Third Five Year Plan, from 22,200 million roubles in 1937 to 123,700 million roubles in 1940, or by 5 per cent

The monetary meomes of the collective farms increased from 14,200 million roubles in 1937 to 10,300 million roubles in 1939 Preliminary data for 1940 indicate a further considerable increase in the incomes of the collective farms in money and in kind, as compared with 1939 State and cooperative retail trade increased from 126,000 million roubles in 1937 to 145,500 million roubles in 1937 to 145,500 million roubles.

Thus, in spite of the hostilities on the frontiers of the Soviet Union in 1939 and the beginning of 1940 the national economy of the U.S.SR has, in the past year, made a big stride towards the fulfilment of the Third Five Year Plan, confidently cannow momentum from month to month

Of the results for 1940, special mention should be made beginnings of a considerable increase in the smelling, of metal and the extraction of fuel. Towards the end or 1940 the average daily output of pig iron had increased to 46-47,000 tons, as against 40,000 tons at the end of 1937. The daily output of steel increased to 58.59,000 tons as against 59-51,000 tons at the end of 1937.

The daily output of coal in the mines of the People's Commissariat of the Coal Industry had increased by the end of 1940 to 467,000 tons, as against 370 000 at the end of 1937 The average daily output of oil and oil gas at the end of 1940 had risen to 97 98,000 tons, as against 84 36 000 tone at the end of 1937

4 Speaking in terms of ton kilometers, railway freight carriage increased from 392 000 million in 1939 to 409 000 million in 1940, while, river borne freight increased from 34,600 million in 1939 to 36,000 million However, there are grave defects in the work of the railways, we still have prational carriage of freight, which places an unnecessary burden on the railways, while the restricted traffic capacity of a number of sections and lines has not been eliminated

There has been an increase in the gross harvest of grain, augar beet sunflower seed potatoes and vegetables. The grain crop of the U.S.S.R. in 1910 amounted to about 7300 mililons poods.

In 1910 the increase in livestock in the collective farms was large horned cattle by 12 per cent, hogs by 15 per cent, sheep by 25 per cent, and goats by 34 per cent. Socializ ed collective farm animal husmandry is confidently increas ing its share in the total head of livestock of the country

The monetary incomes of the collective farms increased from 14 200 million roubles in 1937 to 18 300 million roubles in 1939 Preliminary data for 1940 indicate a further considerable increase in the incomes of the collective farms in money and in kind, as compared with 1939

State and co-operative retail trade increased from 126 000 million roubles in 1937 to 171,5000 million roubles in 1910

5 To pass on to the subject of agriculture the year 1940 was marked by the further consolidation of the collective farm system and the further progress of agriculture of the measures taken by the Patty and the Government to consolidate the collective farm system in the past year, the most important are the following.

Firstly measures to protect the socialized land of the collective farms from being squandered. These measures mipped in the had the tendency to allow free cope to private property relations in our countryside argust which Comrade Stalin had warned the Party.

Secondly, the adoption of the system of calculating the amount of produce from tillage and stocktreading to be delivered to the State on the basis of the number of hectares of land in each collective farm. This decision has given a spur to the instantive of collective farmers in developing socialized farming especially socialized stock breeding in the collective farmy.

Thirdly the decision of the Central Committee of the CPSU(B) and of the Council of People's Commissars of the USSR relating to additional payment of the labour of collective farmers in the Ukrainian Republic for increased yields of agricultural and livestock produce

These decisions and measures are historical in the matter of developing and convoludating the vitory of Socialism in the countryside. They are helping to further and strengthen social ist agriculture. The role of planning in agriculture has also been enhanced. The induces of the plan of cropy yield and livestock productivity now acquire greater validity in connection with the additional payment of the labour of collective farmers who exceed these indices. Thus planning in agriculture has accounted a tremendous additional force.

6 The present war has revealed the tremendous import ance of the transport services to the life of a country or people No sea power if it wishes to be independent, can dispense with a highly developed fleet and sea routes. But the USSR is not only a sea power it is—and this is more important—a big railway power. The importance of railways to the USSR is just as great as the importance of a fleet is to a big sea power.

In the last few years the Central Committee of the CPSU (B) and the Council of People's Commissars of the USSIR have shown special interest in the needs of the transport services and have done everything for their improvement. The hostilities in which the Red Army was involved at the end of 1939 and in the beginning of 1910 aloved that in spite of individual shortcomings our rail way system successfully coped and will undoubtedly be able to cope again with the mobilization requirement of our Red Army.

7 The systematic growth of the national ancome of our country and hence of the social wealth and the personal committee of the working people is due to the fact that new contingents of norkers collective farmers and intellectuals are constantly being drawn into production as well as to the increasing productivity of labour

The size of the working class in the USSR is growing from year to year. The number of industrial workers and office employees engaged in the national economy increased to 30 100 000 in 1940 as compared with 27 000 000 in 1937. According to the plan for 1941 the number of indust with workers and office employees as to increase to 31 600 000.

The continued development of industry demands the systematic replenishment of the working class with new skilled forces and a proper distribution of labour power among the arious branches and regions such as the interests of the national economy warrant

In 1940, on the unitative of Comrade Stalin, the Party and Government began to create State labour reserves by training skilled forces of young workers in trade schools and factory training schools

In 1941 at was proposed to enrol an additional 350 000 new students in the trade and rathway schools, and 537,000 in the factory training schools Already in 1941 socialist industry would be reinforced by 794,000 young skilled workers who had been through the factory training schools

The steps taken by the Party and Government to cr ate State labour reserves were of fundamental importance in deter mining the qualitative and quantitative composition of the working class, in further advancing our industry, and in placing the socialist planning of the national economy on a firm footing.

The rising standard of fiving of the people of the USSR was attended by a rise in the level of culture. State appropria tions for social and cultural services, which amounted to 35,200 million roubles in 1932, increased to 41,700 million roubles, or by 185 per cent in 1940. The draft State budget for 1941 provided for an increase in expenditure on social and cultural services to 47,800 million roubles, 146 per cent more than in the previous year.

8 The cultural progress of the peoples of the Soviet Union is indicated by a further increase in the number of school pupils and university students. The total number of elementary and secondary school-children in the school year 1941-42 would reach 56;20000, or an uncrease of 34 per cent over 1940-41. The number of university students would reach 657,000, or an advance of almost 13 per cent. The increase in the number of students in 1941 and the growth of the number of engineers and technicians in industry will mark a further step in the cultural and technical advincement of the people of the Soviet Union. The people, their culture and their productive skull, these are the decisive productive forces in our society.

During the period of the Five Year Plan the Soviet p-ople have advanced immensely in culture and in the acquisition of technical shill. Very interesting in this respect are the figures of the last census in the USSR

As you know, the census shows that between 1926 and 1939 the population of the Soviet Union increased by 16 per cent. But just see how fast the forces of skilled workers and intellectuals in the Soviet increased in the same period

Increase

37 times

(a) Workers

0

Mechanics

	Turners	80	19	
	Millwrights	13 0	>>	
	Locomotive Drivers	44	11	
	Plasterers	70	.,	
	Tractor Drivers	215 0	11	
ы	Intellectuals			
	Engineers	77	.,	
	Agronomists	50	29	
	Scientists	71	10	
	Teachers	3.5	,,	
	Physicians	2.3		

Such are the chief indices of the rising material and cultural standard of the peoples of the U.S.S.R.

(Extracts from the Report made on February 18, 1941, to the Eighteenth All Union Conference of

the Communist Party of the Societ Union )

## SCIENCE AND WAR

RY

#### RORIS KELLER

z Lessons of war 2 Flesh and blood of life 3 Expedition 4 Diversity of soils 5 Care of man 6 A nation wide domain. 7 Technique works miracles 8 Chemistry and plant life 9 Youth and science 10 Military links

On 22nd June 1941 Germany started its invasion against us along an extensive front reaching from the Arctic to the Black Seas She banked on giving our country its coup de grace by means of a blitz blow but this has failed. Where at the main key to this unprecedented power of resistance with which the Soviet people met this military invasion on the part of the Germans?

In Trarist Russia there were sharp contradictions between the country a economic and cultural needs and the extremely backward reactionary State system. The Tsarist Gonvernment persistently retarded the cultural progress of this nation often resorting to means of violence.

In 1913 out of every fundred inhabitants of Tsarst Inscribed the following words on the report of one of the Governors to the effect that the local authorities (zemstoos) had opened a number of village (elementary) schools—"Un necessary haste by no means desurable " and underlining the last four word. In his recollections, Vitte, the Tsarst mans ter, states that on one occasion the Tsar let drop a character istic phrase "Intellectual—how repugnant this word is to me"

1 Writing of the experience of the lists World War, Lenin said that the war brought many lessons with it, und only to the effect that people suffered but also to the effect that those possessing the great technique, the best organization and discipline and the best machines gain the upper hand Lenin then went on to say that one must come to learn that

and discipline and the loss indeclines gain the upper hand Lenin then went on to say that one must come to learn that without machines and without discipline it is impossible to live in contemporary society—that one must either master the highest technique or be crushed

Speaking of Lenin, Stalm said that in its development science knows of many a man of courage who was able to break up the old and to create the new, irrespective of all obstacles and despite everything. Stalm went on to sai that would like to dwell on one such great man who at the same time was one of the great figures of modern times—Lenin our teacher, our tutor. On the basis of a scientific analysis of Russa's developments, on the basis of a scientific analysis of the international situation, Lenin arrived at the conclusion that the only way out of this situation would be through the victory of Socialism in Russia. Stalin was fully justified when he declared that if the Soviet system has so creatily withstood the ordeal and has still further strengthened its rear, then this means that the Soviet system is now the firmest of systems.

What was it that fundamental State upheaval of 1917 brought to our country and which we understand as being the victory of Lenin and Stahn?

In brief, the answer is as follows

Applying every effort it could, the Tsarist Government had obdurately counteracted against the economic and cultural growth of Russia. The new Soviet system ensured our country gigantic, almost headlong, progress and flourishing of all its productive forces coupled with a fabulously quick and mightly coractive advancement of its people. Lenin's and Stalin's vic tory shattered that thick, heavy and national oppression suffered by the peoples of Tsarist Russia, by its working population. Their victory unlocked and set in mightly, ever accumulative motion that truly mexhaustible fountainhead of gold—the talents and abilities hitherto latent in the numerous nations and nationalities of our country which so vasily abound in the many millioned masses of the people.

2 Science has really become the very flesh and blood of life and has been turned into an actual component part of the Soviet people's every day life

"Science is generously being introduced into the life of our country, generously, to the utmost degree" wrote the great Academician Paylos.

It can be confidently ascertained that all our state systems represents the stupendous realisation and confirmation of the scientific theory for the first time in the world

But the Soviet Russia does not simply acquire science to creates it, develops it on an unprecedented scale and not only gives science vast quantitative growth, but also gives it special properties thanks to which science acquires tremen dous influence on all aspects of the people's life and work. Science in the USSR has been placed on the path of all vast scale State planning work.

To help readers appreciate the scope of this work I shall confine inviself to adducing one instance, taken from the particular domain of science in which I work

In 1918 Lenus wrote his Outline Plan of Scientific Technical Work for the Academy of Sciences Among other major national economic tasks, in this Outline Lenus raised the problem of atmost ensurance of means of independently providing the country with all main kinds of raw materials and industries.

3 And here these tasks have been recomplished under the leadership of Stalin. One sixth of the globe s land surface-the Soviet Union-has been criss-crossed by thousands of scientific expeditions which have explored and prospected from the sey expanses of the Arctics and rearing snow capped mountains in the North to the arid deserts and humid sub tropics in the South Travelling on all concervable conveyances-dog teams, reindeer teams, on camels, on board techreakers, by aeroplane these innumerable groups of scientists penetrated to the most maccessible corners of our country. And these State scientific undertakings brought to light huge richnesspetroleum coal, iron, gold and other non ferrous metals, potassium and phosphorous fertilizers, etc etc -- wealth untold I know of no other such case when a people, in its own direct interests, undertook such widescale system atic planned State scientific prospecting of the entire country in exploring its natural wealth

The following case in point will serve to show the truly striking results already yielded by this work of prospecting in Tsarist Russia the reserves of phosphorites serving as

in fearist tusses the reserves of prosphorites serving as agricultural fertilier were estimated at 5 million tons. By January 1st 1936 this figure had mereased over a thousand fold, the established reserves in the Soviet Union being placed at 5.296 million tons.

No reserves of potash salts whatever were known in Tearist Russia the only known source in the Old World being at of the Strassfurt deposits in Germany By January 1st 1936 the established reserves of potash salts in the Soviet Union were found to he 18462 million tons, and even mathe matics is unable to state how the latter figure compares with that of Tsarist Russia as there is nothing with which to compare it.

And in adducing the most diverse kinds of raw materials and minerals equally striking juxtaposition of figures could be made

And yet our people by no means consider the scientific prospecting of the country a natural riches as having been completed With each passing jear more and more people are drawn in to this work of prospecting beginning with young school-hidfern—youthful naturalist.

The White Sea Baltic Canal the Moscow Volga Canal, the Moscow Metro Railway, the flights from the USSR via the North Pole and via the Atlantic Ocean the opening up of the North Pole he the four men of Papanin's wintering party the heroic voyage of the scebreaker Sedov, the flight into the stratosphere the draining of the Colchis lowlands, the building of the Ferghana arrigation canal which was recently completed and which would, once and for all, eliminate drought by arrigating the Lower Volga regions These are but a few of the separate examples of major Soviet undertakings enterprises which were inspired by Stalia and in which Soviet science grew and extended. The erection of numerous new works and mills ereat power plants the tremen In a word, science is ever dous progress of agriculture fuller and deeper embracing literally all aspects of the Soviet people's life and work which is developing on an unparallelled scale

Foreign scientists had the opportunity of widely acquaint ing themselves with the scope of this work, when they attended the three big international scientific congress convened in the U S S R—that of Soil Scientists in 1930, the Physiological Congress in 1978, and the Geological Congress in 1930.

1 There is a rich discretty of soils in the Soviet Union and soil research is widely understand by many batte research institutes of the USSR, this particular domain of science having been highly developed. Generous State support has been extended to new schools of science in the sphere of soil research and agrochemistry—those of Dokuchaev, Williams, Gedroits and Pryamshinkov, whose scientific achievements to day find wide practical turbits in Soviet agriculture.

The 1935 Physiological Congress showed the exceedingly high level to which Soviet medical science has attained and its vast work in grotecting public health. And in the Patrovic War being waged today our medical personnel is doing its utmost to place itself and medical science as near as post ble to the combatant in active service. Blood transfusions and other modern methods employed in Soviet surgery have proved themselves true miracles of science and skill saxing the lives and health of mann a granch wounded man.

I shall not overburden the present essay with figures showing the great increase in number of scientific institutions and scientific workers in the Soviet Union as compared with Tearist Russia. In our country the increase in the number of workers in the field of science, as in all other branches of work, is not restricted by unemployment—a social evil which is in feasible in the USSR. And the prospects of scientific progress in connection with the continued development of economy and culture in our country are practically unlimited.

But to serve as an instance, I shall dwell on the huge growth which the Soviet Government has ensured for that Chief Headquarters of Soviet science—the Academy of Sciences of the USSR

There was only one Academy of Sciences in Tsarist Russia which, in 1917, numbered about forty regular members These eacdemicans worked in old St Petersburg in a segregated manner, each in his own small study or laboratory, they were utterly apart from the people and nere almost wholly unknown to the latter

Since the establishment of Soviet power three national republican scademies of scenee have been founded and made considerable progress—those of the Ukraine, By-Jorussia and Georgia Another Soviet established institution which has made wast progress is the Lenin Academy of Agricultural Sciences. The old Institute of Experimental Medicine has been turned into the Maxim Gorky All Union Institute of Experimental Medicine and has, to all intents and purposes acquired the nature of a real academy of medical sciences Many new multary academies have likewise been set up.

By 1941 the Academy of Sciences of the USSR itsell numbered 119 regular members and 182 corresponding members But most striking of all are those qualitative changes that have taken place here as compared with the cristwhile academy of Tensit times

The latter entirely lacked such branches as technical agricultural and medical sciences, which the Tsanist Government evidently regarded as inferior fields of knowledge

An important Department of Technical Sciences has been established in the Sowiet Academy, this Department today numbering 25 academicians. Sowiet days saw the election of such famous exposents of agricultural sciences as Williams.

Gedroits, Lysenko and Tsitsin, who were all elected regular members, while Ivan Michurin was elected honorary member of the Academy

n the Accasiny

5 Medicine has received truly magnificent development in the Soviet Union, where care for Man stands first and foremost And at the last elections to membership of the Academy, in January 1939, Soviet medicine found itself represented by a brilliant group of 9 regular members and 10 sented by a brilliant group of 9 regular members and 10 corresponding members—all brilliant savants of the old and the new generations On this occasion for the first time in its history, the Academy elected a woman as regular member—Lina Stern, who has founded her own school in the field of physiology of men For their outstanding achievements in public health protection and in the country's defence, 15 of these newly elected members have received the title Mented Scientist, while 8 have been awardd orders of the Soviet Union

In general, the very type of scientist has fundamentally changed in the Soviet Union Applying the remark made by Mark it can be said that in Tsarist Russia savants were like philosophers who merely, by different means, tried to explain the world, while in the Soviet Union the scientists are called upon to work energetically to change the world In the Aca demy of Sciences' ranks there appeared new academicians organisers and builders of great works and mills builders of huge structures, in the erection of which they accomplished a great deal of scientific work There appeared new Acade micians engineers, who were elected into the Academy not by dint of their printed works, as was of necessity the case in old times, but through their fruitful constructive labour Here too we have many instances of the remarkable progress of the people, for example, the deceased Soviet Academician Alexandrov an engineer who in T-arist times built many Il bridges and dams in the former Tambov Gubernia The Soviet Union entrusted Alexandrov with designing the project for the Druper Hydro Power Plant and this undertaking alone was sufficient to advance Alexandrov into the ranks of Academicans

The Unieper construction undertaking resulted in three Soviet Academicians in the engineering world—Alexandrov, Vedeneyev and Vinter And it is to be remembered that the Soviet Union numbers many similarly huge enterprises of all sorts.

The year of 1934 witnessed an important event in the history of the Academy of Sciences—at the proposal of Stalin the Academy was transferred from Leningrad to Moscow

For more than two centuries the Academy of Sciences had remained in its former place and it seemed as though it had grown rooted there for ever. The idea of transferring the Academy from Leningrad to Moscow and branging it nearer to the Government centres pursued the aim of further drawing in the Academy to constructive State work to help it better and fully serve the interests of the people. This sum has in many respects already been attained and is continuing to be effected.

But the transfer of the Academy to Moscow by no means confined its activities to the capital. On the contrary the Academy grew into a powerful system of scientific institutions branches and bases of which are to be found all over the Scart Hunter.

An important task falls to the lot of the Academy of Sciences affiliates in those Union Soviet Republics which as yet do not have their own national Academies of Sciences These branches of the Academy of Sciences of the USSP exist in the Academy are Argenian, Turkingman Ulabek and

Kazaki republics Each such branch represents the begin angs of a future national Academy of Sciences and helps considerably in training national scientific personnel. The former Academy of Sciences Branch in Geogus for instance, has now been established as the Georgian Academy of Sciences

This system of abhation is most expedient under warture conditions. In those most auxious days when in Mascow and Leningrad all thoughts centred on the urgencies of miltary defence, the Academy's Branches developed scientific work to helo the front and rear

Generally, there was not a single branch of our science which was not reset on a new footing and which did not give most essential and to its people in their fight against the enemy. And in this work science was waging the struggle of its people its own struggle, a fight for its own unhundered existence which is threatened with destruction.

The award of Stain Prace eloquently speaks of the fact that in the present Patriotic War Soviet scientists have in practice proved themselves ardent patriots and have more than justified that faith and esteem that exceptional solicitude which the Soviet people manifests towards science.

6 Stalm said that there are eases when new trails in science and technique are "ometimes blazed not by men universally known to science but by men wholly unknown in the world of science, simple men, men of practical experience innovators.

As instances of such simple people, men blazing new trails in science and technique, Stalin adduced Stakhanov and the Stakhanovites and Papanin and his wintering party

In our country science does not only serve its people but in itself arising from the people it forms the domain of the latter That is why in our country simple men, inno vators of practical experience have such wide opportunities and favourable conditions for taking broad part in scientific progress

Speaking at the graduation meeting of Red Army Commanders who had finished studies at the initiary academies, in May 1935 Stalin and that technique without people who had mastered it was lifeless but that technique headed by men who had mastered it can and should work surractly

7 Four months after Stahn had spoken these words, and in response to his appeal technique as headed by men who had mastered it, really began working miracles

The Stakhanovites have become the constant motive power of sover science and technique. Stakhanovites do not allow seience to rest in its tracks they are incompatible with again namey they bockon and lead on to new and daring achieve ments.

The Stakhanov movement thereby promotes the cultural and technical growth of the working class and hence eradicates the line of demarcation between mental and physical work

The nationwide scientific movement among our collective farmers is worthy of particular attention. How unspeakably remote from science was the impoverable alliterate may of multi millioned peasants in Transt Russia. In those years I was professor at the higher agreedured school in Voronesh We had excellent (for those days) scientific studyrooms and faboratories valuable brand new scientific equipment experimental fields of fettile black earth soil. And almost at the very gates of the school lay spread a vertiable ocean of over whelming peasant poverty. And we with our high culture were scienced from the demands and needs of the neoble

Our collective farm passantry knows of no poverty and illiteracy. The number of millionaire collective farms quickly grows. Scientific production centres have been established in collective farms all over the country—collective farm labor rationis which organize raise and gather that most valuable of all harvests—creative research of the collective farms.

I must apologise to my reader but here I feel that I must digress for a moment and dwell on my own association with collective farmers on the basis of science

Here is one of these auditoriums-a very big one indeed I wrote two booklet lectures for the Collective Farm Correspondence Courses One of these was What is Che mustry and the other Plant Lafe In Moscow Region alone 100 000 collective farmers men and women learned from these booklets and passed their examinations on the basis of what they read therein With the object of making closer acquaintance with this vast auditorium and its successes I undertook trips to various district centres of Moscow Region where my new studens would foregather for their examination conferences And at these conferences my heart—the heart of a scientist—was filled with great pride and joy for my Soviet fellow-countrymen and for the future destiny of science in the able hands of these people A whole volume could be filled in writing of the remarkable progress made by all those whom I met at these conferences

Here is the chairman of a collective farm undergoing examinations in chemisty 1 am present while he gives a genuine lecture. Iake a true professor ably conducting experiments and smoothly writing out formulas on the board. Every thing in the manner of this collective farm chairman spoke of the professor—the way he handled the appliances his manner of speech and writing. In a surprised undertone 1 asked my

—a local agronomst—what education of this splendid reader of chemistry. The reply was The chairman of our collective farm attended elementary school in Tasrist times but had no chance of finishing even this. As a young man he saw active service fighting for the Soviet power. And today he is successfully making leeway in his education.

Among my numerous collective farmer «tudents—men and a venen-» ere many who were up to seventy years of age and a vene over One of my pupils for instance was old gradena Avdotta Yegorova who declared III soon turn chemistry my-elf but still III karn chemistry properly. And this site did passing her exams with "excellent ratings

Here are some characteristic excerpts from letters of my collective-farmer women pupils

Life has ceased to be tedious it has become filled with studying I want to know more and more and to apply my knowledge in practice I feel like crying out to all collective farmers to learn to study so os not to with their collective fields in a blind monner

These words were written by Sitnova who is 35 years old She is head of a wegetable rassing team. In Taurist days she attended elementary school for only two years but today she is studying and has passed her exams in chemistry plant life ets. with good ratings.

The 1939 1940 and 1941 USSR Agricultural Exhibitions in Voicew splend dly portrayed the vast progress of the tons tonside scientific advancement in Soviet agricultura and showed how greatly it had microssed our agricultural production. At the same time the Achibition in tiell yastly promote further progress both in scientific achievements and increased sericultural output.

In brief nationwide advancement of science proceeds today in all fields of economy, culture and defence of our country

9 In one of his addresses Stalin advosted that science, which understands the meaning and significance of the all powerful union of old scientists with young workers in this domain that science which readily and willingly openswide all its doors to the young forces of our country which gives them all opportunity to wan to the peaks of science and which recognizes the fact that the future belongs to youth in science.

As its heritage to the Soviet Union Tearist Russia left a comparatively small stratum of intellectuals, and the main mass of todays intellectuals have advanced since the found ing of Soviet power

The body of Soviet intellectuals has not only grown our accurate to the big and constant influx from Soviet youth but also as a result of the wast creative advancement of the older generations too—a progress which took place in actual production work

The thousand year old line of demarcation between physical and mental labour is being eradicated in our country Mental labour is becoming an inherent need of every person in the country.

10 I would now like to touch on another of my auditoriums—that in the multistry sphere Particularly strong and lastingly vital links of friendship bind us scientists those studying in the sphere of multistry knowledge. Upon the initiative of its members the trade union of higher school and scientific institute workers has undertaken constant patronage over the Red Army and Red Navy in the domain of

/ science. In addition to direct scientific assistance in our country's defence, this patronage likewise finds expression in another way—every year thousands of papers and lectures to various military unit. These lectures cover all branches of scientific knowledge and special subjects, including also lite rature hietory and phalosophy.

Science in the Soviet Union broadly merges with the army where it truly flourishes

During the first ten months of war the scallsh of creative thought in the USSR reached unparalleled scope, covering all fields of science, technique and art. And this vast progress was inspired by the mighty task the country today has in hand And witness of this progress in all branches of knowledge is to be found in the award of Stalin Prizes. This event also testified to many other achievements. Under war time conditions the road between creative research work and its realizations in practice has been greatly shortened.

Neither has the war put a stop to the thorough elaboration of the theoratical foundations of science and technique. There is today not a single speciality in the fields of science, technique and art which has not found its true place in the common cause of our countrys defence. And everybody enthusias ucally takes part in this work—remient scientists, academicians, professors, engineers and technicians—aged men renowned in the world of science and youthful newcomers to this domain.

# SOVIET ASIA—THE RUSSIAN TREASURE HOUSE

x. Transplanting key industries 2 The Republics. 3 Big cities spring up 4 Children's homes 5 Equal partners. 6. Mass Migration.

Beneath that unmense and varied lanscape nature has hidden uncounted riches, the best resources in the Soviet Umon All kinds of minerals, including coal and iron ore found throughout Siberis There is plenty of water power and milhons of square kilometers of standing timber. The whole forest reserve and much of the tundra zone of the present Soviet Umon now lies in Asia.

Regarding natural wealth in the European Urals, few people realize that on their eastern slopes, where Asia begins, are perhaps even fatter resources Here also is an impressive scene of effort by Soviet engineers and builders. And strill further, in Siberia, the war is speeding construction of several further eff contained industrial bases in an equally phenomenal way.

With the loss of the Ukraine, the Kuznetsk Kuzbascoal basin became the greatest producer in Russia. Its rich
seams contain six times more coal than the Donbas itself
in Kuznetsk, the Russians claim to have built the largest
metal works in the world. Suberia likewise lossts the
largest iron and steel works in Russia and the largest
blast furnace in Asia or Europe
One Kuzbas plant alone
makes more than 1,000,000 tons of steel a year

1 The foresign embodied in the Third Five Year Plan has greatly simplified the task of transplanting to Asia certain key industries during the pre-ent war. Because the plan prohibited building more new enterprises in Moscow and Leningrad as well as in New Kharkov Rostos. Gorks and even Sverdlovsk in the Urals the largest possible percentage of building materials was directed to castern and far eastern district. There duplicate shops were created in a number of key machine building oil refining and chemical industries. A third of all new iron and steel factories were planned for castern districts and three quarters of the new Soviet blast furnaces also. With the approach and ceality of war these proportions doubletss were immediately raised.

Double tracking of the Trans Silverian Railway has been followed by other construction including further work on the Turkub Railroad which crinical Central Asia with the Urals and the For Last. The 1600 kilometers of single and double track railway originally sheduled in the Third Tive Year. Plan are in use: Improvements on the northern sea route are also giving better communications with the Orient Power plants cement factories and truck plants—all these are operating as planted along with many new light industries.

Machine tool plants are now working in Vladwoetok, Irkutsk Krasnoyarsk and even in Ulan Ude the capital of Buryat Mongolia. Amerati are coming out of Tornsk and Irkutsk. The fine steel of the east is made into fine tanks in the ea t—not only for shipment westward. Illundreds of millions of tons of timed fish mountains of fur hats andycoats are pouring to the Red army from the far eastern territory. The latter is farther from Moscow than America is from England but the Far East has everything it needs to become industrially self-useful systematical transfer for Moscow than America is from England but the Far East has everything it needs to become industrially self-useful systematical transfer for Moscow than America.

maintain a separate fighting front of its own Down in Central Asia, too, every industry is developed Open hearth furnaces are already working and blast furnaces are being prepared for modern autonomous industrial centres. Stretching from the Caspian Sea on the west to the Atlai Mountains on the east, and beginning in the north at the Urals to end on the light frontiers of Iran and Afghanistan in the south, Soviet Central Asia includes half a dozen republics which, all together, are bigger than British India

2. Image provoking names they have Uzbekistan, Samarkand, Tajikistan Turkmenistan and Bashkiria. A gene ration ago these romante lands of steppe and suld mountain vactureses and the lonely deserts comprising the former Tarist colony of Turkstan were still largely the domain of the nomad. Today they are already sufficiently changed to succor with highly effective contributions of men and materials the cause of Soviet arms

Bashkiria with its "econd Baku and new oil wells 
sunk at Fergan Bukhara and in the Kirgiz and Turkmen 
republies give promise of Soitet oil production which might 
ecentually equal Americas. The karaganda coal field in 
the steepes of Eastern Kazakhistan is now the second largest 
in Russian hands in furnishes the bulk of colong coal needed 
by the industry of the Urals 
cotton used in the USSR and nowadays its own mills 
produce its own textiles Formerly, all cotton was hauled 
2000 miles to Moscow and Leningrad

Kazaklistan's meat industry—a decade ago it hardly existed—accounts at least in part for the high morale of the Red solder It has improved his diet by grung him testy meat instead of the old ration of dried herring

- 3 The great cities and indeed virtually new nations grew from the uilderness II is said that more than 100 towns of over 100 000 each have arisen since the revolution. That would mean that about 10 000 000 people have been surposted and restelled in a couple of decades.
- Karaganda for example dal not even exist a few years ago It now has a population of about 200 000 Stalinsk, as recently as 1936 had only 3 800 souls but is now an important Siberian steel center about as large as Karaganda. Novossbirsk quadrupled in intree years Tashkent quintipled in little more than a decade and today is a metropolis of more than 1000 000 people.

In strange vays the war is helping the people of all these regions as refugees from Europe together with the factory workers, pour in from the west. The migratory wave at present is greater than at any time is the past and millions of hectares of new land are being tilled in Siberia and the Soviet north. A vast acreage is also being reclaimed in Central Asia as well.

In Uzbekstan for example more than 1 000 000 acreswere last year stolen from the desert to be transformed intofertile farm lands—enough new soil to make this Republicself sufficient in grain. In 1912 despite the war the Soviet Union graduated 75 000 new engineers scientist technicians and agronomists and many of them were Avatics. But the remarkable thing about wartime construction in Siberia and Central Asia to date is that it has mortly been done by people who never before were builders. Uzbekistan irrigation projects were built by old farmers and women and children ledby young graduates from the local trade and engineering schools. They transformed Uzbekistan from an agracultural, pastoral country into a state whose production is a streday 75 per cent industrial Meanwhile it continues to supply most of the wool and silk in Russia Translated into war terms that means it keeps the Red Army warm and the Red air force supplied with parachites

Industrialisation is spilling into the neighbouring agrains republics notably Taylisatan and Turkmenistan Even little Kirkhisatan lyang on the Tien Shan bordering Sinkiang is yielding up its coal in the cause of war and sending its sons to the front. The Tayli Republic bordering on Chinese Sinkiang and Afghanistan formerly was only an isolated frontier which landlocked Russia behind the high barriers of the Paruirs. Now railways and road reach in to bring its cotton to the whate buildings of Samarkand where mills hum across the street from the blue domed Gur Emit masselum in which Tameriane lies envitated.

Another surprising thing is the way Asia's youngest people have been mobilised largely by youth itself to do the serious work of war. In Uzbeks-uan alone 400 000 school children worked in the fields in 1912 sowing and reaping gran and cotton.

4 In Tashkent alone are fifty seven children's homes for 40 000 infants from the areas of the front line. Thousands of other war orphans have been legally adopted by Asiatio families—sometimes three or four to a single home. Many of these hitle Russians and Ukranians will grow up to speak, Ublek. Katakh or Kirghiz as well as Russian. Many doubt lees will remain and eventually marry into the brown skinned races as thousands of Russians have already done. There is an almost complete absence of color prejudice here—at least regarding Asiatics—which doubtless explains some of the success this Government has had in entisting and for the war.

Nothing would be more interesting than the explanation given by a Kazakh representing the largest of all the republics of Soviet Asia. He is called Sharibov and Sharibov s own story is partly an answer His father was a poor fisherman on the Caspian Sea and in his youth Sharibov was a fisher man too. For a while he worked in a factory. He never entered school until he was sixteen but then quickly mastered his own written language as well as Russian. He became a teacher soon he was elected chairman of the district executive committee In 1939 he became a member of the Kazakh Government in Alma Ata. A year and he was very much the efficient executive en-conced behind a huge carved desk equipped with a battery of dial telephones and a statuette of a galloping Cossack. At the age of thirty seven this ex fisherman was the chief representative in the All Union Government of the Republic

5 Distances separating free ds and enemies are un important in its war observed Shoribov "The Soviet Union is a big family and the important thing is that we has oths are equal partners in it. When one house of the family is inmaded it is the same as if it happened to old of us. We could not remain aloof and still believe that we had a right to survive.

Nazakhs have the same rights as any other people in the South Umon Their nation is not discriminated against bazakhs have made great progress in the last 20 years with the lielp of Russians Kazakhstan was only a colony before, but now Kazakhs have their own elected local and national governments. They have trained educated kazakh leadere in charge of their own affairs. The majority of Joth the Government and the Community Party are Kazakhs.

Before the revolution Kazakh national culture was suppressed and the Russian language was forced on the country To day, Kazakhs have opera in their own language and their own music and literature Some Kazakh opera stars and ballet dancers are leading arists popular sincema stars in Russin

6 It is indisputable of course that Russia is not only a great power in Europe and potentially the greatest of all European Powers—she is also an Asiatic Power Russias Assatic territories are more than twice the size of the whole of Europe, and Russias sinterests in Asia are far later than American and British interests ombined

Ever since 1927 the Soviet Union has been extensively developing its holdings in Asia and appropriating a large of hare of the Russian national axome for the creation of powerful Far Eastern armies, well equipped with tanks and bombing planes. By constructing armament factores in the Far East, the Russians have done everything prescribe to make these armies independent of supplies from European Russian

This settlement and development of Auatic Russia which the Soviet Government has been systematically stimulating for sixteen years, was varily accelerated by the German mission of Russia in 1931

The dramatic multiary events of that attacl have distracted the attention of the world fron one of the greatest mass ingration in history, as the Somets have moved cillions of her people out of the German occupied territories of Enropean Russia into the nude-open spaces of Assatic Russia.

Few outsiders have appreciated the significance of a Scaret decree that these examined citizens shall be perma mently settled in their new Asiatic homes. Moreow has restricted these people not to think of returning, after the war, to their former homes in European Russia.

This decree was a logical step in the programme of colonization and industrialisation of Aunte Russia which was laid down in 1927. It reveals that the Soviet Government intends to utilize the war to speed up this programme. It suggests that the Russians are just as determined to safeguard their position in Asia as they are in Europe.

With all the suffering and hardship the country east of the Urals still looms as a Promised Land to the Rossians Vast sparsely peopled and Isbulously rich at his drawn Russians eastward since the fifteenth century. When the Reds launched their Third Five Year Plan in 1938 they decided to locate it in the Promised Land

Thus when invasion came the Russians already had a state that it is a state Russia. This industry spread thinly over the face of Asiate Russia. This industry was now merged with the evacuree plants from European Birsts Old drilling equipment from the last Makop fields went to the new oil fields at Emba and the Second Baku' just west of the Urals Donbas workers were sent to the rich Kataganda coal mines. Ukraine textile mills turned up near the cotton fields and handlooms of Karakhatan.

By this process of merger and transplantation, three great industrial centers were developed in the Utals, in the Kuznetek Basin (Kuzbas) and in the rich Soviet Asatic ze publics which cluster east of the Gaspian Sea in the region former's called Turkstan Smaller centers spraing up in the Irkutsk area in the Soviet Mantane Province, and elsewhere in Subseta.

The Urals This is still the industrial backbone of the Promised Land, though other regions are quicky catching up with it Most of the Russian guns, tanks, and planes after the occupation of Western industrial armament centres are made here, plus tractors, locomotnes, and machine tools-

" The Urals also produce from ferro alloys, copper, gold, asbestos, platinum potash, zinc nickel and aluminum

The heart of the Urals is the cits of Secrdost, whose population has soared from 140,000 in 1926 to well over half a miltion today. Secrdiovsk is the iron capital of Russia It is the site of enormous Uralmashisron (Ural Machinery, Building Works) whose tens of thousands of workers, today produce only munitions and dies for munitions making. It is also the pivot of seven major railways. Magnitogorsk is secrediovsk's rival Built atop a great deposit of magnetic iron it centers around a great steel plant, one of the world's largest. In 1926 Magnitogorsk was a hamlet. Today itspepulation well exceeds 150,000.

Chipbunds, the third major Ural city, hes in the centre of the nickel and copper country. Its tractor plant, which once turned out 40,000 tractors a year, now builds tanks. It has a huge zinc smelter, an aluminium plant, and machine tool works.

Kuznetik Basin Hete the Russians helieve, hes the richest sector of Assatic Russia. Its coal re-erves are five times those of the Don Basin. Its iron is inexhaustible. It has gold and lead, silver and zinc, copper and manganete. Industrially it is nearly self-sufficient. Moreover, together with karaganda, it supplies the coal used by the fuel hungry plants of the Urals. Kuzhas's expansion has been tremendous. Novosibirsk, its capital, has more than quadrupled its 1926 population of 120 000. Stalinsk grew from 4,000 in 1926 to 170 000 in 1939. Lennek, from 20,000 to 82 000; Baranall, from 74,000 to 148 000.

4 Turkistan This atea, bordering on India, includes the Kazakh, Turkimen, Urbek, Tadjik, and Kurghiz Soviet republies A bare decade ago this was a country of sand and illiterate nomads Today it is blanketed with mulberry trees for silk coorona, sugar beet and rice fields, textile and silk mills coal and lead mines, copper smelters and tremendous power plants. It produces oil, sall, roon, tungsten and malybdenum To tringate its arid, if fertile, soil thousands of workers had dug the immense northerm Tashbent Solis Shakhmardan, and Gissar canals and the Katia Kuigan reservoir which together wrested 1 250 000 acres of fields from the sands. In March 1913 ground was prepared for a hydroelecture irregation project on the Syr—Darya River destined to have the second largest output in Russia.

Probably the most important product of this region is common and hole signs a rubber yielding dandelion Of Russias pre-war cotton output of 4000 000 hales, 70 per cent was produced here. Kok-sagiz is an "exacuse" from the Ukraine and White Russia although it was first discovered by two young and curious workers in Kazakhstan. In 1912 it was Russia a second most important source of rubber, and more than 2.500 000 acres were obstitled in hole serve.

Thus the Soviet Promised Land is Russia's assurance of -continued large scale resistance, however grave the strain of our It is also a pledge of postwar strength and growth

#### INDUSTRY SHIFTS TO URALS

#### RY

#### ROBIS AGAPOV

r Might of technical means 2 Dismantling and re assembling 3 Planning 4 Urals grow rich in industry 5 Oil industry 6 Science the key to success, 7 Nonstop work 8 A guils example 9 New innovations to New Plants spring up

Academician Fersman the prominent Russian geologist, estimated that a modern or ny of 300 divisions require annually about 35 000 000 tons of seteel about 25 000 000 tons of oil and oil products more than 200 000 000 tons of coal about 200 000 tons oil maganese about 60 000 tons of chronium or 400 000 tons of copper 4000 000 tons of lend 20 000 tons of mickel 10 000 tons of tungsten 5 000 tons of moly be denum and scores of other substances in lesser quantities. Of the 91 elements of Vendedyev's Periodic Table there are no more than 11 that are not of was significance at revent

It is not enough to mine these metals—they must allobe connected into arms with a high degree of precision and this involves thousands of complex operations on the highly specialized machinery of a modern plant.

Germany had about 210 dissions in the field against the Soviet Union all of them armed in keeping with the last word in technique hence one may conclude that German industry consumes quantities of strategic war materials approximating the above proportions J During the year 1942, the Red Army has not only stemmed the pressure of German armes but also delivered a series of shattering blows to them, which would have been impossible had not the Soviet army possessed the appropriate equipment and armaments. The testimony of German war prisoners strikes a common keynote of fear and amazement at the might of the technical means they encountered contrary to all their expectations, on the Russian front

It is common knowledge that as a result of her sudden invasion of the Soviet Union, Germany in the first year of the war succeeded in sexing the Ukraine and the Donhas where the basic Soviet industrial centres were located. It might have seemed that this turn in events deprived the USSR of her sources of both the strategic raw materials and the finished products required to hold a vast front several thousand kilometers long against an enemy drawing upon almost all of the powerful and long established industry of Continental Europe Yet nothing of the kind happened

Two basic estreamstances explain this at first sight an invested by the Soute Government on the transfer of industries from the Uraine, Byelorussia and some regions of Central Russia to the East, and, secondly, the powerful development of eastern industry during the past decade

Both of these circumstances were supreme tests for the

2 To dismantle and load on rathway cars, transport for ribousonds of kilometers and reassemble hundreds of large factories and to do it all within the space of four or five months while superior enemy forces were fixedly driving deep into the country—meant subordusation to a single plan.

of all fields of human endeavour over a vast area from the

This unprecedented undertaking proved to be feasible precisely because of this single, all-embracing economic plan that had long before been laid at the foundation of the entire tower national economy. Its realization involved the greatest of exertion but it did not entail the introduction of any new principle. The preciousites for its success had been created in the course of long verys of peaceful construction.

The new problems that confronted scientists engineers and industrial executives in charge of the evacuation were only technical in nature, ranging from carrying capacity of railways to the time required for demantling industrial plant and reassembling it, the presence of raw material sources at the new industrial sites, etc. These factors too depended in certain measure on the organizational ability and theoretical knowledge of the people in charge for they had at their disposal all the transport facilities of the country, they could dispatch labour power wherever it was needed and undertake the development of new inness and oil wells wherever natural conditions permitted

3 The second circumstance which made it possible to ship Western industry to the East was also the result of planning. The rapidity of industrial development in the Eastern districts during the past ten years was by no means a spontaneous phenomenon. As far back as 1930 a new tron and steel center in the East was projected, an idea that led to the launching of one of the greatest construction jobs ever undertaken anywhere—that of the Urals Kunnetsk development. This leviathan of industry came to consist of the Magnitogovick Iron and Steel Works, a reconstructed 2,000 km railway and iron and steel works of Kuznetsk, the

rnetsk coal fields, as well as a large number of the enterprives metallurgical to power, transport and other undertakings. By the beginning of the war, part of this independent of the war, part of the properties that been realized and the rest was under construction. Hostilities did not interrupt work which has been going on at a constantly increasing pace.

Besides the Urals Augmetsk development numerous enter prises of the most diverse types were built throughout the huge territory from Bashkira to Krasnojarsk. These enterprises were provided for in the Third Five Year Plan, whose salient feature was a new distribution of industry in the enterprise were provided to the content part of the country.

4 This program of industrial action offected the Urals particularly. Next to the numerous old small factories, lugge enterprizes made their appearance, among them the Urals Heavy Machiners Works Chelyabinsk Tractor "lant, the Berenmik and Solkamsk Chemical Works krasnouralsk Chemical Works krasnouralsk Copper Smelter, the new Ziatoust and Nichai Tagil Iron and Stel Works, not to mention exores of others if Soutet industry as a whole grew 53 times during the first two five pear plans, Urals industry facreased 68 times in the period from 1928 to 1937. By the latter year the output of elective power exceeded the 1917 level 31 times over, with further growth continuing in geometrical progression.

Thus economic planning made possible the exceedingly rapid transfer of industry to the East after the outbreak of near and provided it with factory buildings, ready sources of raw materials and surveyed natural resources

The Urals which covers a huge territory more than 1,200 km in length, is rightly considered the leading producer of armaments in the Societ Union. Scientists call the region of

"Geologists' paradise" The comparatively low mountains separating Europe and Asia are among the oldest ranges on the globe Millions of centuries worked slowly but surely to prepare them for the prospector and the muter. As a result of movements of the earth's crust the action of surface waters and the effect of elimatic conditions, an almost incredible variety of minerals ordinarily concealed deep in the bowels of the earth is here to be found close to the surface.

Neither of the two renowned mueral areas in the Appalachians in the United States and in the Ruhr in Europe has more than five different useful minerals to offer This has inevitably led to the one sidedness of their economic development in the Urals on the contrary, more than 60 of the known chemical elements can be found in one or another concentration. The catalogue of Urals wealth in cludea about 800 minerals and more than 12 000 deposits.

The muneral map of the Urals is an alluring erary quilt of diverse geological designations. Before the October Revolution the area was known mainly for its iron ore, copper, gold platinum and precious stones. During the 25 years of Soriet poner industrial processing of more than 30 chemical elements has been launched, of which 20 were either entirely abent or hardly figured in the former production chart of Drals industrial.

During the Five Year plans large deposits of bauxite were added to the list of the region's natural wealth. The Krasnava "Shapochka deposits alone produce annually thousands of tons of this raw material for the aluminum industry.

5 Oil is another newcomer in the Urals, where during the five years from 1934 to 1939 more than 10 oil bearing districts were opened Formerly unknown were also its potash deposits, which are 5 to 6 times as great as the previously known world total and which have given the USSR first place in the world as regards this raw material. Large deposits of magnesium salts, out of which magnesium, the lightest of all metals is made, were lound at Solthamsk

Extremely important among the discoveries of the past few years is manganese which is now found at 150 points. The iron and powerful steel industry of the area is no longer dependent on manganese brought from elsewhere

Although it was known before 1917 that the Urals con tained nickel, it is only now that large works have been e-tablished in the Southern Urals to produce this essential ingredient of high grade steels

During the recent period, a number of rare metals have made their appearance in Urals industrial production, among them titanium, cobalt tungsten, berylium, zirconium, cesium, etc.

Almost all of the known chronoum deposits in the US-S.R are located in the Urals. The area is of world importance as regards the production of the platinum and asbestos, as well as for its potash, chrome, inagnesite and fiervillum workings

The Urals is the Promised Land of iron and steel. The region possesses almost all the known types of iron ores, including one containing chromium, nickel, itano magnetise, etc. This discretty affords industry a tremendous range of action in the production of various kinds of iron and steel, high grade metal in particular. At present more than 2,000 iron one deposits have been surveyed. Among the world renormed stees are the Buikal deposits, which produce high

grade ore exclusively, and the Magnitnaya Mountain with its enormous reserves cropping up right to the surface, which is being tapped by the open pit method and excavators

The same can be said of copper, production of which has increased many times over during the last few years.

There was nothing accidental about the discovery of natural wealth and the industrial development in the Urals, for intensive prospecting was launched throughout the area immediately after adoption of the plan for harnessing its productive forces

6 Science is one of the prerequisites of the success of any plan. Hence the foremost ejecutific forces
of the country headed by the Academy of Sciences of the
USSR were set to studying the natural wealth of the region
Their efforts were augmented by the prospecting organizations
of the different industries with their stoffs of highly competent expects. For instance the best authorities on oil work
ang with the petroleum prospecting organizations of Baku
were sent to survey and study the Bashkiran oil at Ufa
Scientific research institutes were set up on the spot, provided
with topnotch equipment for the purpose. All this led to the
enumerated discoveries and insured that the planning bodies
of the State had at their disposal by the beginning of the war
a wealth of material pertaining to the geological and economic
toosphilties of the area.

When Germany invaded the Soviet Union, the Academy of Sciences immediately reinforced its Unit branch with "bidditional personnel and launched under the leadership of its president Academician Komarov, a "dudy of all this material in order to give the people in charge of planning a complete picture of the conditions in which the enterprises evacuated to the Urals would find themselves. Simultaneously with

the transfer of these enterprises their new inter relations, in other words the new economic structure of the entire region, were planned in detail

Today the people of the Urals say that the frontline passes through their open hearth and blast furnaces and they act accordingly

7 During the victorious 1942 winter offensive of the Red Arm, a Molotov vorker by the name of Gorodilov worked 96 hours straight at his job knowing that the in interrupted flow of parts to the assembly line depended on him. It would have seemed that the human body could not withstand such a strain but when it was suggested that he should take time for rest Gorodilov asserted.

"They are advancing for neeks already but my offensive is been going on for only two or if ree days

Another case of fitter Shlepnev who caught a chill at his beach and worked even when his temperature shot up. The dottor advised him to leave the shop but he refused for there vas no one to take his place. Nor did he leave his job until the last part in the batch he was working on was ready for the conveyor. Biting his lips from pain he now dropped down on the stretcher and was carried out of the shop like a numbried solder is carried from the battlefold.

There was a case at the Urals Heavy Machinery Worls when a large press producing important aircraft parts uent out of commission. Each hour threatened to cut the output of uarplanes. To repair it it was necessary to dismantle-and do a needlang job in one of the high pressure cylinders, a job that would have required almost a week under ordinary conditions. A volunteer repair crew found another course. They disconnected the cylinder, increased pressure correspond.

angly in the remaining ones, and began the repair job while the press was going. The cylinder had to be healed until it was almost red hot yet the volunteer workers entered the scorching inferio although each two minute trick inside brought with it all the torments of being baked alive. True, they apent several days in hospital after this battle with heat, but the press did not stop for a single minute and the front received as many surplanes at the plan detacted.

Though frequent these feats of valour are of course not the general rule. The rule is an almost meredule intensity of labour which will be found in every shop and mine. No matter how great the production the more it is increased the better it is. Everyone knows that this hastens victory, and hence everyone does his utmost. There are factories in which each torker produces treble the quantity required by the extehlibed stradards.

- 8 The number of women who have entered the Uralia factories is exceedingly great. First and foremost the fact is an expression of their lofty parison. I had an opportunity to meet a girl who was doing work women had never done before. Her name is Sharimova and her job that of bleat furnace worker at Nizhim Tagil. Her particular job requires physical strength againty and endurance not to mention the fact that it entails great responsibilty. Yet she is considered one of the best workers at the plant. When I asked her why he selected such an arrhous profession, she said it was not only the attraction of iron smelting that had made her do it but mainly a destre to show other women that they could hake over any mans job and thus spur more of them to enter industry. Her motives were social and her reasoning correct. The example she set did win followers.
- 9 Today every Urals factory has become a sort of an experimental laboratory. Discoveries and inventions follow

, one another This, as a matter of fact, is one of the main-prings of the tremendous increase in productivity since the outbreak of war Here is an enumeration of some of the innovations made during one year at the Urals Machinery Works alone.

Tool Production without any forging whatseever wasworked out and launched. This revolution in toolmaking both effects a saving of millions of roubles annually at the plant and frees a large number of machines for other work. Moet important of all, it cuts production time to a fraction

The use of wood gas for all manner of heat treating processes is of first rate significance, for the Urals has unlimited sources of the wood—needed for its production. The saving effected in more costly fuels is huse

A new method of trimming castings has effected a great saving in labour and eliminated an entire department. Besides, the time required per casting has been sharply reduced

As a result of the work done by the Academy of Science and a special commission of engineers, all technological processes requiring expenditure of electric power have been improved by introducing a number of ingenious inventionareducing power consumption so much as to have the effect of the opening of a new 5000-km electric power station.

Due could one scores of other similar monations at thisplant. Like work is being conducted at all Urals enterprises, with not only scientists and engineers taking part in it but rank and file workers as well. The latter often produceexceedingly interesting immentions.

One can safely say that never has Soviet technique forced ahead so fast as during this wor, and that the centre of this progress, is uithout a shadow of doubt, the Urals

During the first year and a half of war, the workers, engineers and scientists of the Urals doubled industrial production. This was by no means accomplished by laying an excessive strain on the human element or by drawing on reserves accumulated before the war. On the contrary, the further this progress goes, the fewer are the difficulties on the way and the faster the growth of the territory's productive forces.

10 All Urals is now a construction site. New large plants, some of them comparable only to the gigantic Magnitogorsk works are going up with unprecedented speed, new power stations are being set up and already functioning, factories are building new shops and expanding existing ones. The boundless raw material resources of this "geologist's paradise", the enthusiasm of people forging arms for the defence of their country and unified, planned direction of this enormous industrial machine are the guarantee of future progress. To this testifies also the letter sent by the workers of Sverdlovsk Region to Joseph Stalin, summing industrial operations in the region during the first half of 1943. The letter reveals that from January to June the industry of-Sverdlovsk Region made strades that put it well on the way to achieve the goal thus year, which is to double the output. Some enterprises such as nuckel, manganese and other works. exceeding even this, at first sight fantastic rate of development.

## WAR BRINGS IMPETUS TO INDUSTRY

- 1 Rapid increase in production 2 All round progress.
  2 Huge output drive 4 Rationalisation proposals
- 5 Everything for the front, 6 Efficiency suggestions

The year 1910 was a year of the new Socialist develop ment in the national economy and of further advances made an industrial production The lessons of the present conflict are important. From the technical point of view, this war as a war of motors—of motors in the air and on the ground

The success of both the sides depends on the number of motors possessed by each. The war industry of the capitalist countries and the USA have been reorganized.

1 The general indices of the increase in the level of production in the USSR and the USA are as follows—

		MICIEUSE IN THE ICACL OF
production in the	USSR and the U	SA are as follows -
	U.S A	ussr
1000	1000	7000

1929	100%	100%
1939	80%	415%
1939	93%	482%
1940	111%	534%

Only in 1910 when industry was put on a war foot agdid the USA show an industral increase of 11% while at the same time the Soviet Umon increased production 5.39' times. Technical equipment has increased and production largely intensified. There has been a steady growth in production in the USSR in the 3 years of the Third Five Year Plan Industrial output during this period has increased from 90 to 137 thousand million roubles, 1 e by 14% will be clear from the following table --

	Total output in millio
Year	Roubles
1933	42,030
1934	50,477
1935	63,137
1936	80 929
1937	90,166
1938	100,375
1910	137.000

Another positive fact is that during the second half of 1940 the quality of production markedly improved

There has been a 76% increase in the engineering in dustry, which is vital for the defence industry. The Russians were asked to bear in rund. 'If you don't want any surprises, then don't keep the production of armaments behind other material production.'

The output of the means of production during the year 1940 increased by 339 as compared with 1939 and 52½ as compared with 1938. Such is the rate of production in the U.S.S.R. and it was accompanied by the reconstruction of industry, machine building and equipment for the defeace industry. The entire reproduction measures have been in Creased.

2 The capital investment in national economy in 1940, amounted to 38 thousand million roubles. During the three years of the Third Five-Year Plan the capital invested amount ed to 108 thousand million roubles.

During this period 29,000 factories, mines, electrical power stations (not including industries of local importance) were put into operation while during the whole of the I rist

Year Plan 15 000 enterprises were put into operation.

As compared with the First Five Year Plan the Third Five Year Plan during its first 3 years registered the following increase in production

The coal mines have produced 51 million tons more coal
The power stations , 2100 , kwts , power
The cast roa . 2100 . tons ..

There has been a steady improvement in the material welfare of the population with the increased production.

Important successes were achieved by Socialist agricultures.

ture on the bass of the further consolidation of the collectine farming system The gross harvest of cereals of 1910 approaches seven million pools. The gross hurvest and yields of all other culture—sugar beets, potatoes, fodder plants has also increased Collective farms are successfully developing animal hasbandry

In the course of the first eleven months of 1940 42,000 mer cattle farms were organised in collective farms, the num ber of high borned cattle has considerably increased while the number of pigs and sheep showed a particular growth

The growth in the national income has been 29,000 million roubles, i.e. the national income has increased from 99 thousand million roubles in 1937 to 123 million roubles in 1940.

The national income of the USSR increased from 21 000 million roubles in 1913 to 123,000 million roubles in 1910, or the rate of increase was as follows —

N/	IANOITI	T IVCO/IE	
íĬn	millions	of roubles)	

1913	21,000	1929	23,900	1933	48,500
1037	99,000	1938	105,000	1940	123,000

Thus despite the military operations on the borders of the Soute Union at the end of 1939 and the beginning of 1940, the national economy made great progress and continued the increased rate of growth

3 Lahour productivity in industry has risen considerably in the past twelve months since the high output competition was faunched in response to Stalin's order of the D<sub>e</sub>y on May 1st 1942

Initiated by iron and steel workers and aircraft and tank makers this production drive swept the entire country, embracing millions of workers in all branches of industry According to latest data labour productivity has risen in the aircraft industry by 30°c as compared with April 1942, the tank industry, 33%, armaments plants 15%, electrical in dustry, 27%. It likewise rose notably in the oil metals and chemical industries.

The production dries, in which millions wed to gain first place for their plant, department or crew was accompanied by an unprecedented display of inventiveness and ingenuity on the part of the workers and engineering personnel. There has been a big influx of proposals and inventions improving production processes and organization of labour, and for economizing raw materials suptess and fuel.

4 Some 21 000 rationalization proposals and inventions were submitted in the course of six months by workers at munitions plants. The application of but one third of these suggestions resulted in a saving of 259 million roubles and an economy of thousands of tons of tron and steel and non fetrous metals.

One of the manifestations of the production drive was the widespread formation of "froutline crews" Motivated by the desire to do their utnost in boosting the production of armaments, workers who joined these crews consider themselves solders who stuck to their job for days if need between the production of the strated in the Urals, these brigades later made their appearances at many factories and mills. The Stellin Auto Plant in Moscow has 612 such brigades.

Like in former production drives, one of the main features in the present countryside movement is the friendly help rendered by the experienced workers to their less skilled shapmates. In war time, with the influx of women and youth atto industry this sad has assumed special significance and has been instrumental in helping the newcomers speedily acquire profesency.

At present the country-ude production drive in entering a new phase, as workers in different fields, in response to Stalin's call for redoubled effort, are pledging to boost output atill higher. Once again the iron and steel workers of Kuznetsk, Sibetra, started the ball rolling, by challenging all other plants to produce more metal for the front. Magnito gorsk, the giant Urals iron and steel mills, has taken up the challenge.

Viore and more munitions works, aircraft factories and other industrial establishments report overfulfilment of production programmes and the delivery of telling quantities of armaments and other supplies to the special fund of the High Command that is made up of production turned out in excessiof the State plan

Concrete pledges for higher output continue to pile up, indicating the determination of the country's soldiers of in dustry to provide an evermounting stream of tanks planes armaments and munitions for the Red Army

5 At present the vorkers in the Soviet rear from factory director to the youngest apprentice are fixed by a single thought expressed in the slogan everything for victory!\* Inspired by the lofty aims of the short fixedom and independence waged by their country, war for freedom and independence waged by their country, both the people in the rear and the soldiers and officers the enemy—by fire and bayonet in the front and by selfies labour in the rear

Wherever one looks in the Soviet rear one utilinesses the heroic efforts of Soviet soldiers of industry. The look upon their jobs as posts entrusted to them in battle

Despite the many difficulties resulting from the 1 ar workers are not stinting effort in order to produce more today than 5 esterday and to turn out from month to month eart greater quantities of aircraft tanks guns, munitions clothing and food Today there is no branch of industry in the Societ Union that is not constantly increasing the rate of its output

The Soviet aircraft industry produced 75° more air planes in 1942 than the year before and in the first quarter of this year the rate of increase was still greater. The enter prices of the morter industry turned out in December 1942 store as much as in January of the same year vibile ships and increased their production by two and a half times in the

same period

Hatred for the enemy and the will to victory hate given

Hatred for the enemy and the will to victory hate given

rise to a powerful sweep of patriolism throughout the country.

tapping inexhaustible reservoirs of energy and enthusiasm, which has been usually reflected in the rapid development since the outbreak of uar of the high output competition organized and led by the trade unions

Hundreds of thousands of industrial "assoult troopers"—workers who regularly exceed their output quotas—have come to the fore in the course of this production drive. Despite the great influx of new workers, all trade unions have recorded during the year 1942 a substantal rise in the proportion of these topnotchers to the total employed. For instance, the percentage of workers who exceed their plans in the aircraft workers union has risen from 35% last year to about 55% now. The machine tool workers' union reports that more than half of the workers it embraces, regularly top their production quotas.

Overfulfilment of quotas has begun more and more often to run to substantial proportions. In the heavy machinery, for example, already in December 1942 every fifth worler doubled or trebled his quota

These are people who in the full sense of the word have the right to consider themselves frontliners holding ad vanced positions. They regard their shop as a sector of the front. As a matter of fact, they often call themselves members of "frontline brigades," of which there are thousands not plants. It is not rare for them to deny themselves rest and to continue to exert every effort at the machine until the current engagement in the battle of production has been won

do An important role in the substantial rise in labour productivity and the increase in output achieved by Soviet industry has been played by the thousands of efficiency proposals that constantly pour in from both workers and engineers. These rationalization suggestions are saving tens of millions of roubles of State funds, thousands of tons of precious raw materials, and giving industry the equivalent of hundreds of new machine tools

At one aircraft works alone, these efficiency suggestions and inventions yielded an economy of 3,500,000 roubles in the first quarter of 1943, as much as was awared by this means in the course of the whole year of 1942. Another plant, an ordnance works, during April 1943 alone saxed 3,700,000 roubles by the introduction of efficiency ideas emanating from the personnel.

The men and women of Soviet industry, while reviewing on May Day of 1913 what they themselves have done for victory, follow with the greatest of interest the successes of the mighty machinery of production set up by the other helligerent nations and the efforts the workers of the other countries are putting in

# SOVIET INDUSTRY STANDS THE TEST OF WAR

BY

#### MIKHAIL KALININ

- 1 Difficult task achieved 2 Highly talented experts
- 3 Living economic organism. 4 Able to withstand the test.

Mikhail Kalinin President of the Supreme Soviet in the course of his speech on 26th Animersary of the Socialist Resolution in November 6 1943 referring to the industrial strength of the U.S.S.R. and how it stood the test in war time recalled the words of Stalin who said.

The past year (1912) marked a turn not only in the progress of hostilities but also in the work of our rear. We were no longer confronted with such tasks as evacuating enter prises to the east and converting the industry to production of airmanents. The Soviet State now has an elicient and randful expanding war economy.

And it is a fact that in this period our people have put not a little effort and labour into expanding production and further perfecting armaments. And we are able to record big achievements. The Red. Ymny as Comrade Stalin said, has received an uninterrupted supply of numitions of win.

And Comrade Stalin both as the head of the Government and as the Supreme Commander in Chief of our armed forces,

was able to declare with gratification, "The selfless labour of the Soviet people in the rear will go down in history along with the heroic struggle of the Red Army as an un exampled feat of a people in defence of their motherland."

It is a common knowledge that our industry is the child of Stalir. It has developed along the lines marked out by Comrade Stalin. And those achievements, which our industry has been able to show in wartime, have a history which we are able to follow from the very outbreak of the war by a perusal of Comrade Stalin's public utterance.

In his very first statement, radio broadcast of July 3rd 1941. Comrade Stalin called upon the Soviet people to intensify the efforts of all our plants and produce more rifles. machine guns artillery, bullets, shells and aircraft Four months later, in his speech on the occasion of the 21th Anni versary of the great October Socialist Revolution Comrade Stalin again reminded our workers and office employees, men and women that they must work with might and main in the factories and produce ever greater quantities of armaments and equipments A year later (1942) Comrade Stalin stated that one of the most difficult tasks of wartime-that of shift ing the base of our industry to the eastern regions-had been accomplished Workers had been installed in their new places, mills and factories, working for the armed forces had been equipped , labour and discipline in the rear had been fortified and the industry was already working satisfac torily, honestly and punctiliously-supplying the Red Army with armaments it needed

Under the conditions of wattime, our industry has coped with gigantic organizational difficulties, and has, from month to month, improved output and satisfied the ever increasing needs of our same

2 The question arises from what sources does our the problem of supplying which is enabling us to cope with the problem of supplying the armed forces with everything they need, and where does it find technically trained people and highly talented experts? We have raised this question because it is being asked by the foreign press by Allied press with a 'please by neutral press with automishment and by the German press with thereally an outery of fury

Who did not know about the building of the Magnitogor-k combinat, Urals machine building works and Kuznetsk combinat, Chelyabinsk and Stalingrad tractor plants and the harvester combine works of Saratov and Rosso? Who did not know of the building of entire cities which sprang p in these years, such as Magnitogorsk and Komsomolsk, the erection of blast furnaces and other plants in the Donbas and the Elvane?

The achievement of our industry are unquestionable. They have been tried and tested in the furnace of the war. They were determined by Stalin's methods, to create and develop our industry.

The development of Soviet industry was an all round development. The Government the Party and Comrade Stalin strove, if we may put it so, to provide our State with everything necessary for industrial activity.

And we built not only steel mills and war plants, but also gunts like Batrasel Taskkent and other spinning and weaving mills and developed the Cherchik factory in Ubbek stan which manufactures introgen for fertilising our cotton fields Each of our republies has created its own industry for the satisfaction of the requirements of its own population All this is apart from the industries under All Hunon control , have been destroyed, we have the strength and capacity to develop and to perfect our industry and rehabilitate the runned cities and villages

The best proof of our creatuse efforts have not been supported it is a fact that during the war we have put into operation immerse new plants—such as its Chelyabursk, steel mills, aluminium works in Suberia and the Altai tractor plant, what is near that in Central Asia we have indexident the Farthad development project with its great power stations and metallur gical works that we have lisd railways of great length and in Noscow have completed the third section of the subway Creatise decelopment, in one degree or the other, is going on every republic and every foun and, in some republicancemental Asiatise for example—it has assumed gigonic dimensions.

## SUMMARY

l in the USSR, land, its natural deposits waters, forests, mills, factories, mines, rail water and air transport banks, post, telegraph and telephones large State organised agricultural enterprises, municipal enterprises, such as dwell ing houses in the cities and industrial localities are all State property, that is to say they belong to the whole people and are administered by State bodies with a scientifically worked out plan The product and profits of these enterprises go into the coffers of the State which uses them for economic development and for improvement of the conditions of the population For this reason periods of crisis are unknown and impossible in the USSR. The national income is entirely at the disposal of the working people and their State The Constitution of the USSR guarantees the right to work, rest and lessure education and maintenance durin, sickness, incaprentation and old age The cost of all these amenities is borne either by the State or the factories or the trade unions There is no direct taxation in the Soviet Union

The Soviet Union is the only country in the world where plained economy reigns supreme and is developing it a rate unparalleled by any other country in the world

All the nations and races of the USSR irrespective of their past or present condition and irrespective of their numbers, enjoy fully equal rights in all spheres of economy, public, political and cultural activity. Any direct or indirect restriction of the rights of or, conversely any establishment of direct or indirect privileges for, citizens on account of their

ace or nationality, as well as any advocacy of racial or national exclusiveness or hatred and contempt, is punishable by law

The citizens of the USSR are guaranteed by law

- (1) Freedom of speech,
- (2) Freedom of the press,
- (3) Freedom of assembly, including holding of mass meetings and
  - (4) Freedom of street processions and demonstrations.
- 2 EDUCATION -Doors to knowledge and advancement
- stand wide open to everyone

  (1) Liquidation of illiteracy—an accomplished fact
  - (2) Universal free and compulsory elementary
  - (3) Establishment of institutions for Higher Learning
  - (4) Establishment of institutions for agriculture, sciences economics engineering, technical trainings
  - geology ele (5) Mass technical training

cifizen

- (6) Mass training for skilled workers
- (7) Factory Trade Schools with general education and for training some particular trade
- (8) Newspapers books, and periodicals, etc are so priced as to be within the reach of every Soviet
- (9) A village without a library is a rarity today.
- (10) In Transt time there were 73% and in some parts 93% illuterates

- 3 AGRICULTURE—In Tzarist time most of the Russian peasants nere very poor, starred, illiterate and superstitions Vost of the land belonged to the Tzar's family, monasteries, landlords and kulaks Thirty per cent of the peasants had or no horses, 34% no implements and their ploughs and harrows were wooden Today the Soviet farmer leads the world in large scale mechanised agriculture.
  - (1) Collectivisation of farms
  - (2) Tillage and harvesting by machines supplied by the Machine and Tractor Stations provided by the State
  - The agricultural machines and tools are made in the country today
  - (4) Farm hands are well looked after
  - (5) Soil is unsurpassed in fertility
  - (6) Agricultural Research Stations are established for the betterment of the crops, cattle, poultry, pigs, sheep, horses, etc

### 4 INDUSTRY—Industry is nationalised,

- Establishment of—
  (1) electric power stations
  - (2) heavy industries
  - (3) chemical industries
  - (4) synthetic rubber industries
  - (5) non ferrous metallurgy
  - (6) automobile, tractor, harvester combine, aircraft, precision instruments and machine building in dustries, etc.

S NATURAL RESOURCES—These are immense but the majority of them were undecovered in the time of the Tzar. The first thing the Soviet Government did was to start geological surveys for which they brought experts from abroad while their own people were being trained. Today there are plenty of first class geological experts amongst the Russian people.

#### (1) Mmerals-

- (1) Ferrous ores
  - (2) Copper
  - (3) Lead
  - (4) Zinc
  - (5) Chromite
  - (6) Manganese
  - (7) Bauxite-Aluminium.
  - (8) Gold
- (2) Coal
- (3) Timber
- (4) Oil

(5) Chemical deposits—potassium salts apat to etc

Geology is held in high esteem by the Soviet Government as a science which can contribute largely to the welfare and prosperity of the population

#### 6 COMMUNICATIONS—Development of—

- (1) Railways
  - Waterways
     Roads
- (4) Airways

Soviet Russia is the only country in Europe that has highest number of nitways for commercial and passenger transport

- 7 LABOUR—Labour is well looked after by the State in every way. Women have equal rights with men in all spheres of life. Wages are paid either in kind or cash, but according to the quantity and quality. The more one produces the more he receives. Wages are fully guaranteed irrespective of whether the given undertaking is working at a profit or a loss. There is no unemployment.
  - 8 DEBT.—Soviet Union has no foreign debt. It always meets its current obligations with utmost punctuality. This is due to the growth of gold industriand also of course to the controlled economy. There is however ar reference to the last point in the articles selected for the purpose of this book.

## NATIONAL GROWTH RESULTING FROM FIVE-YEAR PLANS

## APPENDIX I

## Economic and Cultural Growth

# National Economy

CAPITAL INVESTMENT
(In billion roubles in prices of corresponding years)

(ln.)	billion roubles in prices	of conservation
Five Years bel	fore planning 1924 1928	11.1

The First Five-Year Plan 52 1 1979 1932
The Second Five-Year Plan 1933-1937 155 4

# NATIONAL GROWTH (MAIN FACTORS) la reass 1041 1940 per cent or fold

Industrial Production (per cent )	100	{908 (1938)		a 0
National Income (b lion roubles Budget Expenditure (milion	) 21 ) {6 670 (1928)	173 259	497 6 2 497 6	6 0 26 0
Electrical power (billion KW 1		(1938)	1 934 2	21 0
Canacity of Electrical Po Stations (KW)* Coal (million tons) Oil and Gas (million tons) Station tools Machine tools Railway Zogmes Freght Cars Tractors Grain (million centiners) Raw Cotton (million centiners)	1 1 29 9 242 1 500 418 14 800 Nil 801 7	8 1 (1937) 164 6 34 2 184 48 500 1 620 67 400 52 500 1 195 25 2	468 971 7 338 3 133 3 287 6 355 4 49 2 240 5	7 5 3 7 4 4 32 3 3 6 4 6

<sup>\*</sup>For more details on electrification see page 391

	1913	•	1940	Increase per cent	or fold
Sugar (millons tons)	10	9	21 8		2 3
Cattle (million head)	51	3 {	63 2 1938)	23 2	12
Population (millions) Workers and employees (millions) Institutions (for care of women	139 } 11	2	193 30 4	39 171 4	1 4 2 7
and infants)	9		4 388 (1937)	48 655 6	487 5
Hospital beds in (thousands) Books (milhons) Theatres	175 86 159		840 701 825	380 715 439 2 322 8	4 8 8 2 5 2
Museums	180	1	761 (1938)	322 8	4 2
Interscy (per cent)  Education—attendance at prima and secondary schools (milbons	ry	10	8í 7 35	0 189 3 348 8	29
Higher education (thousands)	112	o	620	453 6	5 5

#### PRODUCTION OF LARGESCALE INDUSTRY

#### (in billion roubles in invariable prices of 1926-27)

\		at process or a	
Year	Consumers goods	Producers goods	Total
1913	6 3	4.7	11 0
1917	3 2	37	69
1920	0.8	0.9	1.7
1925	Upward	trend begin	s almost equalling
	the po		7 but still less than
1928*	9 0	78	16 8
1932	17 2	21 7	38 9
1937	36.9	53 3	90 2

 (After 1928 Russia has never looked back any year figures for 1932-37 being specified.)

From the above figures it will be clear that USSR took and 7 years to reach nearly the same level of output and development of 1913 as the Soviet Regime started functioning in 1921 after the civil war came to an end. The real progress was therefore made same 1928 when the first Five-Year Pha was inaugorated.

## APPENDIX II

#### Socialisation of National Economy Private Sector Socialist Sector

	Private Sector	Doctum	
	1928 1937	1928	1937
		00.	0_
		.0.	99 1
	ań 09	440	
National income	17 6 0 02	82 4	99 8
Gross autput of total industry		3 3	93 6
Cross output of agra ulture		76 4	100°
( toss output of agre differ	23 6	70 4	100 B
Retail trade turnover			
a nnc N	DIX III		
APPEN	DIX		
Production of C	onsumer's	Goods	
(in billion roubles in inv	- A.St. nates of	1926 27)	
tin hillon roubles in inv	TAITURE BLUCES OF		
1913	_ 63		
1937	36 9		
(in million roubles in inv	ariable prices of	1926 277	1937
(in million rountes in in-	1913	1978	
	316	53>	1 091
Wool	1 876	2 742	5 147
Cotton		208	461
	168	172	1 396
Lanen	17		3 158
Knitted goods	28	449	1 539
Sewing	65	273	1 539
Boot & Shoo			
Granulated Sugar (11 thousan)			2 421
Grandated Cugar (**			971
tons)	70		89
Confectionery	22		00
Cigarettes (in bilkons)			
Canned goods (in mill or cans o	93		1 372
400 grams each)	93		

## APPENDIX IV Agriculture

AGRICULTURAL ECONOMY 1937 1929 3 992 1 497 316 8 1 500 Average annual number of workers (tto sands) 6 7 81 5

Tractors (thousands) Capacity of the whole tractor park 1 600 776 12 2 (thousand H P) 1 7 Sowing area (m llion hectares) 3 700 180 Large horned cattle (thousands) Gross product on (in invariable prices of 1800 0 230 1926 27 in million roubles ) 4 100 391 Grain supply for the State (1929)

State farms

(in thousand tons)

	harvest-combines	m State	farms 13	1937
reached 24 000				

Sown Areas (in million Hectares)		
	1913	1937
The whole sown area	105 0	135 B
Grain crops area	94 4	104 4
Area under truck garden crops	and	
potatoes	3 8	9 0
Technical crops area	4.6	11 2
Forage crops area	2 1	10.6

#### APPENDIX V

## Rail, River, Sea and Air Transport

Freight (in million tons)	132 4	517 3	
Passengers (in millions)	184 8	1 142 7	
Length of railroad (in thousan	od .		
kilometers)	58 5	84 9	
	1929	1937	
Sea Transport (in million tons)	8.5	29 4	
River Transport	1928	1937	
Freight (in millions tons)	18 4	66.9	
Passengers (multions)	17 8	65 2	
Air Traffic	1923 192	8 1932	1937
Extent of airlines (in 1000 kms)		3 31 9	105 6
Conveyance of goods (in thousand tons)	000	0 4	38 0
Conveyance of most (so thousand tons)	000	0.7	20 0

#### APPENDIX VI

### Class Composition of the Population

Tsanst	R.				
			USSI		
	191	3	19	37	
Bourgeosie (Landlords big & small					
urban bourgeosse tradesman)	3	6	10.	ıl	
	12	3	n	ı.T	
Working population	16	7	34	7	
	65	i	5	6	
Collective farmers	n	ıl	55	5	
Other sections of the population	2 :	300	4		

AVERAGE ANNUAL WAGE OF WORKERS AND EMPLOYEES
(fa roubles)

1924 25 450 1937 3 047

WORKERS	AND EMPL	EMPLOYEES	(Population 1	170 500 000 ns)	in	1939)
		1913	11			

1925 12 2 1928 1932 1937

In 1928 there were in the U S S R 1 576 000 memployed In 1931 noemployment was completely haudated and does not exist any more

#### TECHNICAL TRAINING OF WORKERS IN INDUSTRY (October 1 1930)

Las ed the State Lagaged in techn cal technical Exam nation study ٠. 24 40 Large-scale industry 18 56 Coal industry 28 53 Iron and steel industry mach ne Metal working and 27 42 21 building 52 Cotton manufacture

#### WORKERS BENEFITING BY SANATORIUMS AND REST HOMES The number of workers and employees who received free passes (in thousands)

Rest Ho nes Sanatoriums 437 2 74 2 1 900 D 1927 28 5.5 0 1938

# PHYSICAL CULTURE AND SPORTS

The number of physical culturists will have received badges for passing the standard sport tests (in thousands) Men Women Total

1938 1938	Men 429 4 468	36 510	465 4 978

## APPENDIX VII

#### Education

CHILDREN AND YOUTH IN GENERAL EDUCATION SCHOOLS Number of pupils in millions

Number of p	1914-15	1927 28	1937 39
Plementary education	7 3 0 6	99	8 6
Secondary education	7.9	11 4	29 4
Total			

#### STUDENTS IN GENERAL EDUCATION SCHOOLS (In millions)

	191	I 4-1∋	193	7-38
	Towns	Rural	Towns	Rural
		localities		localities
Flomentary education	12	6 1	5 9	15 6
Secondary education	0 6	0 01	3 4	5 2
Total	18	6 I	8 6	20 8
TOTAL NUMBER OF STU	DENTS	(ln millo	ns)	
			1914	1937-38
ntary educat on (1 4 classes)			7 3	20 8

Total 18 6 I	8 6	20 B
TOTAL NUMBER OF STUDENTS (in million	s)	
Elementary education (1.4 classes) Secondary education (general and special) Higher education Courses and schools for training workers and for	1914 7 3 0 7 0 1	1937-38 20 8 10 5 0 55
tuition of specialists by correspondence Schools and courses for elementary instruction of adults  Total	ml ml	7 5

#### In 1937 out of every 1 600 inhabitants 268 were studying STUDENTS IN TECHNICAL SCHOOLS AND SCHOOLS OF APPRENTICESHIP

#### (In thousands)

(** ·····	1914	1937-38
Schools of apprenticeship graduating skilled workers	93 2	224 3
Technical schools and other special middle schools	35 B	862 5

## SPECIALISTS GRADUATED (in thousands)

	1979-32	1933-37
H gher educat on institut ons	170 0	369 9
Special middle schools	291 2	623 0

NUMBER	LARGE-SCALE	INDUSTRY (in thousands)	
	192a	62 2	
	1928	92 1	
	1930	112 6	

1937	604	Z	
STUDENTS IN	UNIVERSITIES	(ln	thousands)
1014 15	112	•	

376 6

1914~15	112
1927 28	168
1932-33	504
1937 38	550

1933

## PROVISIONS OF STIPENDS FOR STUDENTS

Percentage of students who were receiving State stipends in the

course of 1938 85 300 Students of special middle sel ools 91 000

Students in universities and colleges 91 0°c.

In all State stipends were being received in the course of 1938 by 1126 600 stu lents of universit es an 1 coll ges and of special in ddle schools

## INSTITUTES FOR SCIENTIFIC RESEARCH

INSTITUTES FOR SLIE VI		
Institutes Scientific Workers	1929 438 22 600	1938 806 35 600
PUBLICATIONS Number of newspapers Circulation (in million) Books	1913 859 27 86 7	1937 8 521 36 2 637 5
THEATRES 1914 1938	153 702	
Classification (1938)		28
Onera		318

# Opera Drama 23 Masscal comedy 119 Theatres for young spectators Theatres of Collective and State Farms 702 702

Note -Theatres in the USSR work in 47 languages

e -Theatres in th	eUSSR	WOLK IN THE ST	-
1914 1938 (Ja	MUSEUM n 1)	180 761	
c	lassification	(1938)	
Historical Regional Technical Natural Science Fine Arts Public Health			

Others

Total 761

#### APPENDIX VIII

#### Women

#### WOMEN IN NATIONAL ECONOMIC RECONSTRUCTION Workers and employees (in millions)

1979 3 3 1932 60

6 9

53 G

1937 PERCENTAGE OF WOMEN IN TOTAL NUMBER OF

1933

Education

WORKERS AND EMPLOYEES 1929 National economy as a whole 27 2 35 4 27 9 39 B Large scale moustry 18 9 Transport 8 0

Public health PERCENTAGE OF WOMEN' WORKERS AND EMPLOYEES IN VARIOUS BRANCHES OF NATIONAL ECONOMY TO TOTAL NUMBER OF WOMEN WORKERS AND EMPLOYEES

> 1897 1937 Industry and Bu iding 13 40 21 Education and Public Health . Agricultural Proletariat 95 nıl Servants and Charwomen <u>'''0</u> 5. Transport Trade Public Catering 15 nil State Farms Machine and Tractor Stations and other Agricultural ß Enterprises nil State and Public Institutions 6 mil 3 Others

The data for 1897 contant among Others a small number of women working in transport trade and State institu tions In the data for 1937 these categories are removed from Others

WOMEN STUDENTS

1938 1928

Higher Educational Institutions	Men	Women	Men	Women
Technical and Other Special	71 9	28 1	56 9	43°1
Middle Schools	62 4	37 6	48 4	51 <del>6</del>
Workers Faculties	84 4	15 6	64 8	35 2

#### WOMEN TEACHERS OF ELEMENTARY AND MIDDLE SCHOOLS (Percentage of total number of teachers) Rural Localit es

Cit es 1927 1927 1935 Men Women Men Women Men Women Men Women

38 4 90 7 Classes I 11 40 2 59 8 71 7 28 3 58 9 41 1 Classes V X

WOMEN ENGINEERS AND TECHNICAL WORKERS IN LARGESCALE INDUSTRY

Percentage of total number of engineers and teel meal workers

( n thousands)

1914 1933 9.5 (Single instances) 35 B 97.9

16 2 1937 WOMEN SCIENTIFIC WORKERS IN THE INSTITUTES OF SCIENTIFIC RESEARCH

Percentage of total number of scientific

in thousands

workers 1914 1929

1939

(s ngle matances) 5 1 12 Î

## WOMEN PHYSICIANS

34 0 Percentage of total number of physicians

(un thousands) 19

1914 9 7 1931 44 9 50 6 1938

30 53 4

## WOMEN IN COLLECTIVE FARMS

Participation of women in farming work (average performance of workday units per farmstead ) Women Mes

135 (35 8%) 242 163 (37 1%) 276 1937

Note -The workday un t is a unit of rate and calculation of the quantity and quality of the collect ve farmer's labour in the collective farming work

#### IN LEADING POSITIONS IN COLLECTIVE FARMS

Categories of functionaries	Percentage of women in 1936
Members of administration	18
Managers of livestock farms	16
Brigadiers of livestock brigades	22
Heads of brigade divisions	67
Directrices of clubs	11

### APPENDIX IX Mother and Child

From the very inception of the Soviet power care of the mother and child has been one of the prime considerations of the government Soviet women enjoying equal rights with men in all the phases of cultural social and public life have a right of work education and of provision in case of illness and old age as have all the citizens of the USSR This right is guaranteed by the Constitution of the USSR

#### MEDICAL PROPHYLACTIC INSTITUTIONS FOR PROTECTION OF MOTHER AND CHILD 11

Seasonal craches in collective

and State forms

Medical consultation at the

institutions for protection of mother and child

	of mother and child	12	Milk dietetic kitchens
2	Rest homes for pregnant	13	Health playgrounds and play
	women		groups
3	Materiaty homes in towns	14	Rooms for suckling infants in
4	Maternity homes in collec-		factories and institutions
	tive farms	15	Separate apartments for
5	Maternity sections in		mother and child in the
	hospitals of towns and		transport system (rooms

other an
youn

10 Permanent creches in col children lective and State farms

The State expenditure for the care of mother and child are continually mounting. In 1936 the State expended for this purpose two milhards roubles in 1941 over four milhards. The State aid to the mothers of many children amounts to two milhards roubles annually In the USSR, 300 000 mothers receive State aid averaging from two to five thousand roubles each.

#### CRECHES FOR CHILDREN

The creches have helped the Soviet women to combine maternal duties with active work in the social fields. The rise in the creches as recorded as follows:

#### Beds in permanent creches

1914 —550 1929 +56 066 1936—616 000 1938—723 651

In addition to permanent creches a large number of seasonal and transportable creches is opened by the rural authorities during the period of furring and other seasonal work

Beds in seasonal and transportable creches numbered over four millions in 1941

## APPENDIX X

### Soviet Constitution

The highest organ of State authority and organs of State administration of the Chinn of Soviet Socialist Republies comprise of the Supreme Soviet of the USSR consisting of Soviet of the Union and the Soviet of Nationalillies each of which has three bodies made up of its members namely

- (a) Legislative Bills Commission (b) Foreign Affairs Commission
- (b) Foreign Affairs Commission (c) Budget Commission

Under the Supreme Soviet of the USSR is the Supreme Court of the USSR and the Procurator of the USSR together with

the Presidum of the Supreme Soviet of the U.S.S.R. consisting of one President 11 Vice Presidents. Secretary and 24

members
These three bodies make up each of the executive

The Body next in importance to the Supreme Soviet is the Council of People's Commissars which works through the following commissions—

- (1) State Planning Commission :
- (2) State Control Commission , (3) State Bank ,
- (4) Committee of Fine Arts and Higher Education.

In addition under the Council of People's Commissars work Ammunitions

#### (1) All Union Proples Commissariats consisting of

Defence. Poreign Affairs. Foreign Trade Railways, Post, Telegraph & Telephones. Water Transport. Fuel Industry,

Electric Stations & Electrical Industry. Iron & Steel Industry. Nonferrous Metallurgy, Chemical Industry. Aircraft Industry. Shipbuilding Indus-

Armaments, Heavy Machine Building Industry. Medium Machine Building Industry. General Machine. Building Industry. Navy. Agricultural Stocks

#### (2) The Union-Republican Commissariats consisting of

Fish Meat & Dairy Industry,

Pood Industry.

Textule Industry.

Light Industry. Tumber Industry. Agriculture, State Grain & Live-

try.

Building Materials Industry. Trade. Finance Internal Affairs, Justice. Public Health

### stock Farms. SCHEME OF ELECTIONS TO THE SUPREME SOVIET OF THE USSR

The Soviet of the Union has 569 deputies on the basis of one deputy for over 300 000 of the population. The Soviet of Nationalities has 574 deputies consisting of

275 deputies from II Union Republics, 25 from each

242 deputies from 22 Autonomous Republics 11 from each

45 deputies from 9 Autonomous Regions, 5 from each 12 deputies from \$2 National Areas, I from each

PRINCIPAL NATIONAL COMPOSITION OF THE SOVIET OF NATIONAL STAFF

NATIONALITIES						
Russians Ukrainians	141 36	Byelorassians	15	Mart		6
		Jews	15	Abkhazians		6
Georgians	34	Tapks	14	Kara Kalpaks		6
Azerbaijaians	33	Germans	10	Bashkurs		5
Armenians	30	Kalmyks	9	Chechens		5
Uzbeks	28	Ossetians	9	Mordovians		5
Kazalhs	24	Komis	9	Moldavians		5 /
Kirghiz	17	Bervats	8	Karchans		5
Tatars	16	Udmurts	7			
Turkmens	15	Valents	7			

Thirty-one other nationalities making 59 in all, are represented in the Soviet of Nationalities

According to the Soviet Constitution amended recently five more Republics have been addded to the Soviet Union making in all 16

Further these Republics have been granted Autonomous Status enabling them to have their own Army Umts Foreign Commissars
Diplomatic Representatives abroad and representation at the International Conferences

## Electrification

(Ref. Note on page 379)

The amount of electrical energy produced by all the electrical stations of Russia in 1913 is less than the produc tion of the single Dnieper hydraulie power station in Kichkas in 1937 In Russia electrical stations work in four ways 1e

> (1) Hydrauhe power 2 Coal

Brown coal

Peat

The following is the analysis of the source of electrical power in Russia (1938) -

> Peat station Brown coal station Coal station Hydraulic station

It is interesting to note that within a short distance of the famous hydraulie station near the mouth of the Dateper are three coal electrical stations one of which is situated on the Duieper itself and the other one is near the month of the dam Similarly, the second hydraulic station in the north has not far from it two stations working with peat one of which is at Leningrad Round about the source of the Volga and other rivers of Russia, there are five electrical stations, three of which work with peat and two with brown coal There is of course a coal station at Magnitogorsk and another at Stalinsk Of the remaming three, one is a coal station and two are worked with brown coal

itely with the powerful enemy who ventured to encroach on Soviet territory

The USSR already occupies the eccond place in Europe and third in the world in the manufacture of aluminum The building of mickel plants is proceeding apace, assuring in creased mickel simeling. Production methods of other non-terrous and of rare metals have also been mastered and, with the prospecting of the sources of raw materials, their output will rainfully increase

Very important is the development of the production of our morrous aluminium and magnesium alloys, of beryllium bronze and hard alloys with a tungsten and itanium base as well as the manufacture of articles made of tantalum, rubi dium, caesium and other such metals. The steadily increasing practice of using substitutes facid proof cements, lining tiles, and proof eartherware and plastic materials) in place of non ferrous metals is also worthly of note

The gold output of the USSR has advanced from the fourth place in world production (1913) to second place.

Signal successes have marked the road of electrification upon which the Soutet Union has entered. On the threshold of its third Five Year Plan period, the capacity of the Soutet Umon's electric power stations was 76 times that of Tsanist Russia, while the amount of electricity generated was 193 innes the Tsanist figure. The coefficient of utilization of station capacity is from one and a half to two and a half times.

high as in the capitalist countries. The Lenin Hydro orice Power Station on the Dineper alone produces more injectly than did all the stations of Tsarist Russia combined.

6 Remarkable strides have also been made by the let chemical industry which was still in its embryonic before the revolution. Under the Five Year Plans.

synthetic ammonia works have been built and put into operation in the South, the Central Districts and the Lirals. The output of sulphuric acid has increased more than tenfold since 1913, that of superphosphate more than twenty fold, etc. In the case of sulphuric acid the increase is due to the erection and proper utilization of powerful towers as well as the application of Hirreshop Bayar contact processes Soviet sulphuric acid plants are equipped with the latest inchanized overs, electric filtration for the purification of the gas and powerful apparatus for the concentration of the acid. The Stakhanoutes in these plants have increased the efficiency of the tower and contact processes. Cases are on record where the specified standards have been exceeded by as much as four hundred oper cent.

No bakehte or other composition material was produced in Tsariet Russia. Today they are used to manufacture not only numerous industrial supplies but also general consumers goods.

Whereas before the revolution the annual output of rayon was 110 tons, artificial fibre production has now become a large industry

The manufacture of synthetic rubber from (th) alcohol, using the method invented by the late Academician Lebedow, is of great importance in securing the Soviet Union's economic independence. Eighty per cent of all rubber required in the USSR for any purpose whatever is now produced artificially in Soviet plants.

In Tearst days the country's cluef rubber product was rubber foot wear. Today the domestic production of rubber goods includes many other items, such as transmission and conveyor belts, hose and tyres. In 1938, 23 times as much rubber footwear was produced as in 1913. As the demand for rubber good for industry as well as for general con umption is rapidly growing provision has been made to long the raw materials supply base and build the neces are additional works. During the third Five Year Plan several more synthetic rubber works were constructed.

Sovet engineers are tireless in their efforts to desive and master new improved technological processes. In determing what method of mechanization is to be applied to any particular plant quantity and quality of output are not the only consideration. Exerv endeavour is made to render working conditions as favourable as possible for the workers concerned. Thus Soviet engineering talent as did gently applying itself to the problem of replacing pneumatic pick, liammers and perforators by electric hammers and perforators of introducing combines in working steep gradient coal seams so as to do away with blasting operations and

The campaign being waged in the USSR for the thirly and complete utilization of raw materials, for the precession of fuel heat and electric power losses and the elimination of all waste of human energy is bound to yield great economies in view of the tremendous size of the country, and these economies in turn will ensure an extra increase in output, ich implies increased selfare for the goods

The rapid progress made by heavy industry in the U.S.S.R. astonn-bird the world. It is the result of the immension of the Soviet Socialist system over the capitalist in. And this superiority has been made secure by the Constitution which impered the workers of the Soviet industry to strike for new victories and for the accomnator of the their properties.

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## MAGNITOGORSK—A STUPENDOUS PROJECT

## BA

#### A BAIKOV

- The Urals—Kuzbas problem 2 A bold step 3 Supply of raw materials 4 Largest ore-mining en terprise 5 Industrial plants
- 1 Tsainst Huesta was an agrarian country and industrially backward. But even that industry was extremely unevenly distributed throughout the country. Textife mills for instance, were built only in the central districts, far from the sources of raw material. Oil extraction was concentrated almost entirely in Baku, and cool mining in the Donetz Basin (Ukraine). The principal iron and steel plants were concentrated in Southern Ukraine. This was practically the sole coal iron and steel producing centre of Tsairst Russia it accounted for nearly 90 per cent of the coal mined in the country and about 75 per cent of the par iron produced.

This uneven distribution of industrial enterprises and their remoteness both from the sources of raw material and from the consuming districts caused heavy losses to the national economy of the country Naturally, the Soviet Government, which has set itself the aim of developing the productive forces of the country according to a definite plan and along strictly scientific lines, has from the very outset dealt with the question of the rational distribution of industry throughout the country

Lenin dealt with this problem as early as 1018. It was he also who at that time put forward the idea of building up a new coal and metallurgical base in the east of the U.S.S.R.—what was known as the Urals Kinzbas problem. The project visualized the creation of a powerful iron and steel industry based on the iron ore deposits of the Southern Urals (principally of Magnithaya Mountain) and the coal deposits of the Kurnetck Hasian

This idea was further elaborated and put into practice on the initiative of J V Stalin

Both the iron ore deposits of Magnitinaya Mountain and the could deposit of the Kumetsk Basin are extremely rich, and of a very high quality. The distance between them is about 12:00 miles and in order to utilize them to the best advantage, it was necessary to build two large industrial centres an iron and steel and ore mining centre in the Southern Urals and an iron and steel and coal mining/ centre in Western Siberia.

This test project was realized during the period of the First Five Year Plan An official decision was promulgated by the Soviet Coverment on January 16 1929 providing for the construction of the Magnitogorak Iron and Steel Works on the basis of the previously drawn up plans On March 10 of the same year work was started on this construction, and on February 1 1932 pig iron began to flow from the blast furnace No 1 of Magnitogorak.

Simultaneously with the building of the Magnitogorsk olant construction was going on in the Kuznetsk iron and works which started operation somewhat earlier than former

Professor Davis, an American engineer, wrote a proposithe Urals Kuznetsk project at the time that, according

3 The principal source of the iron ore is Atach Mountain, one of the four peaks of Magnitina; a Mountain rising 2,017 feet above sea level. Its we tern slope is rich in magnetite deposits representing a finge lode and the volcanical rock formation.

The presence of tron one in Magnitinaya Mountain salton in long ago. Ore in small quantities, was extracted here a early as 1747. But at that time nobody had a clear idea of the significance of three deposits. The Mourtain attracter ter, little attention. It was situated in a sparsely imbabiled atepps region devoid of any forests and there were no rail ways. The hittle ore that was mined was carled by horses to the Djelovetsk. Works situated about sixty mules from Magnitizara Mountain.

Prior to the World War of 1914 16, the output of one from Magnitina a Wountain never exceeded 50 000 tons a year, In those times all the Lral industries used only charcoal and this necessarily limited the output

All this has changed with the introduction of numeral fuel from the Kurnetsk Br in The Kurnetsk coals cole wellhave a small seh and sulphur content, and their known deposits reach hundreds of billions of tons. As a resulhazininas Wountain has acsumed a tremendous sizufacione

Thorough geologic surveys have established the amount of the ore deposits and their composition. It has been brought to light that Magnitings Mountain contains 450 000,000 four of magnetite ore with an average content of iron amounting to over 60 per cent.

Due to the processes of erosion the top deposits have been largely transformed into easily restorable mattite with a small sulphur and pho-phorus content. Its average conjesition is the following iron of tT per cent, sulphur 0.19per cent and phosphorus 0015 per cent. The deper deposits contain more sulphur and less from tan average of 5d 31 per cent) but their phosphorus content is also small.

1 Om of the largest ore maning enterpreses in the world has been built up on the site of these deposits

The mine is well equipped with modern machinery. All the processes of one extraction are a bundred per cent mechanized. There are also crushing, washing, sorting and agglomeration plants attached to the mine.

In the past seven years the mine supplied 30,000,000 tons of ore to the Magnitogorst, and Kurnetsk Iron and steel Works. At percent a supplies annually (5,00,000 tons of or ready for the Idast farnaces. This represents 18 per cent of all the iron ore mined in the USSR.

In addition to the Magastinaya Mountain deposits, the Combine has at its disposal the Komaroto Agazinsk from ore, the known deposits of which reach 150,000,000 tons, and manganese are deposits estimated at 2,600,000 tons.

The districts in the vicinity of the Combine abound in valuable minerals which are used as fluxes and fireproof and building materials

The known deposits of these numerals include -

Limestone 289,000,000 tons
Dolomte 2,700,000 ,

Quartzite 6,000,000 ,,

The known deposits of fireproof clays and moulding wand reach scores of millions of tons

Thus nature has fully provided the Magintogorsk Iron and Steel Works and all its auxiliary plants with an abundant and uninterrupted supply of all the necessary raw materials for a lone time to come.

5 The Cole Chenneal Plant consists of four batteries (276 overs) of the koppers Becker system and covers the entire chemical cycle. At the same time it provides an enormous amount of high caforied gas which is utilized for the open hearth formaces and for other purposes.

The Iron and Steel Works includes four blat furnaces with a volumetric efficiency of 41,670 cu ft each. The output per day of each furnace is over 1000 tons of pig iron

There are ten stationary open hearth furnaces of 150 to capacity each and four of 350 ton capacity each with a total hearth area of 9,648 sq fi. Tvo more open hearth furnaces of 350 ton canacity each have now been added

The plant is equipped with a powerful blooming mill with two continuous billet mills and any of the most up to date automatic merchant mills including a wire-drawing mill of a design which is unique in the world.

Another powerful blooming mill is provided with as

continuous billet mill "720"

The huge Iron and Steel Works has its own

Central electric power plant .

Steam power department .

Vechanical shop forge shop foundry and repair shop; Chamotte and Dinas brick plant.

Chemical electro technical and thermo technical laboratories.

Railway, automobile and other transport facilities

A huge reservoir formed on the Ural River by the building of two dams, supplies the Works with water and feeds the water supply system which has a dailer capacity of 132 000 000 gallons of water. The Magnitogorsk Combine covers an area of 27 sqmiles in the valley of the Ural River

By September 1, 1938, expenditures on the construction

By September 1, 1938, expenditures on the construction of the first section of the Combine amounted to 1,322,500,000 roubles

The Combine employs 26,000 workers, engineers and

In the seven years following the beginning of its operation the Combine produced

Over 30,000,000 tons of trop ore .

10,500,000 tons of coke .

8,200,000 tons of pig iron .

5,600,000 tons of steel ,

4,400,000 tons of rolled steel

The Iron and Steel Works has been gradually increasing production, while the construction of the Combine has been going on all the time. At present the first section of the Combined is completed.

The following figures indicate the nature of its work in 1908

Output of pig iron-1,796,000 tons,

Coefficient of volumetric efficiency of blast furnaces—

90 ,

Average annual output of pig iron per blast furnace—
449,000 tons .

Output of steel-1 580,000 tons

The output of pig iron at the Magnitogorsk Iron and Steel Works amounts to nearly a half (42 per cent) of the total output of pig iron in Tsaris Russia When the second section of the Magnitogorsk Combine is completed within the next few years, it will include the following

A mining enterprise consisting of three powerful crushing plants, a washing and a concentrating plant, an agglomeration plant and a number of auxiliary plants.

A coke chemical plant with eight batteries (544 ovens) covering a complete chemical cycle,

Eight powerful blast furnaces,

Three steel smelting shops with 29 stationary open hearth furnaces (ten of 150 ton capacity and nineteen of 350 ton capacity),

Two blooming mills with continuous billet mills " 720," " 630" and " 450".

Six merchant rolling mills .

A rail and beam rolling mill

The Combine will produce annually

8,500,000 tons of corted iron ore,

Over 4,000 000 tons of coke,

4,500 000 tons of pig iron ,

5,000,000 tons of steel .

1,000,000 tons of rolled steel

The Vagnitogorsk Combine is the Jargest iron and steel enterprise in the world. Its annual production of pig iron exceeds that of all the iron and steel plants of Tearist Russia taken together.

In the beginning, when the construction of the Viagni togorsk Works first statted, a camp town of white tents spring up at the foot of Viagnitiaya Vountain on the banks of the Ural liver—In these tents lived the hulders of Magnitka, "
—engineers, technicians, workers—Soon however, the tents
were replaced by wooden barracks, and these have in their
turn from replaced by brick buildings

Feday Magintogorsk is a city of bundreds of tall well linkt bouses, with a population of 250 000 an electric fewer plant water works scores of wide streets, equales, builterards parks street cars and a good autobus service

In 1958 the expenditures provided for in the city budget of Magnito-corek included 3-35-000 roulles for educational purposes and 49-18 x,000 roubles on public health

An additional sum of 13 500 000 roubles was expeuded on education public health, sports and social maintenance out of the budget of the factory committee of the non-rad steel workers union. Large sums are spent on these purpset by other public organizations, such as the trade unions of the building workers, miners, etc.

Magnitogorsh has two higher educational establishments a muning and metallurgical institute and a pedagogical institute, forty secondary schools with 25 000 pupils, and peda gogical, industrial and medical training colleges

In addition to these a variety of training courses function in the Works such as courses for providing higher qualifications factory apprentice courses courses for the training of Stakhanovites, university and college preparatory courses. More than 60 000 workers completed these courses in past six lears. A sum of over 42 000 000 roubles has

expended on the maintenance of these courses

The four main libraries of this new city have volumes

The city of Magnitogorsk boasts of a fine theatre with a seating capacity of 1,000 eighteen moving picture houses, a cruss, a large number of clubs, including the splendid iron and steel workers' club which has a large stage and in which concerts are held regularly. Besides concerts by local must cause roctals are given here by singers and musicians from the largest centres of the country such as Moscow, Leningrad, Kier. Thirty and Balur.

The population of Magnitogorsk, like the population of all towns and villages of the Soviet Union, receives expert indical aid free of charge. The city has seven polyclinics, six general and lying in hospitals 26 children's nurseries, a pecial children's polyclinic, ten women's and children's medical consultation centres, dispensaries, a camp sanitorium for adolescents with accommodation for six hundred campers at a time scientific sonitory stations, etc.

The City Soviet of Magnitogorsk devotes a great deal of intention to the development of sports. The facilities that have been provided for sports activates include two stadiums with a seating capacity of 16,000, an aquatic sports station on the Ural River nine gyinnasiums, a hunters' stand, and skating rinks in the winter. In the aeronautical club young people receive training in parachute jumping, gliding and filme.

This, in brief, is the story of an industrial grant and a large flourishing city that have spring up in the course of a few years in a desolate and practically uninhabited district.

## LIGHT INDUSTRIES

#### BY D KHAZAV

1. Nine branches 2 Cotton 3 Bonus. 4 Two guis' achievement. 5 85,000 shoes daily 6 Social Insurance Funds

I Sovet light industry—the industries producing prosumer's goods—may be regarded as including nine major branches cotton linen woollens will, kind goods leather and footwear, fur, glass and clothing All these industries were the charge of the Peoples Commissaria of Light Industry with January 1939 when a special People's Commissaria was formed to direct the textile industry. These two commissariats control only the Jarge, machine equipped enterprises, the text being locally controlled

The successful building of a modern heavy industry that is, the industries which manufacture means of producin —and the collectrization of agriculture have made it possible to reorganize light industry on up to date technical line? Thus, in the two years 1936 and 1937 the tertile modustry was supplied with over 650 000,000 roubles' worth of new machinery, all of which was made in the Soviet Union.

Huge sum have been mested in building nen factories in the light industries and reconstructing existing ones 1,347 000,000 roubles during the First First Year Plan period and 5 618,000,000 rubles during the Second Five Year Plan period

The guiding principle in capital development in the Soviet hight industries is to bring the manufacturing plants in closer proximity to the sources of raw material and to the consuming districts—particularly to the smaller nationality rections of the USSR

In Tsarist times no industries existed in the border regions of Russia inhabited by the non-Russian nationalization of Russian in the Russian nationalization of Russian nationalization of Russian nationalization of Russian nationalization of Russian national natio

The Soviet Covernment, in pursuance of its policy of creating real equality for all the nations and nationalities comprised by the USSR, has provided for the rapid industrialization of the border regions. Nowadays the national republics not only produce cereals and colton they also have heavy and helpt industries.

During the period of the two Five Year Plans important new textile districts have been created in Central Asia, Siberna and Transcauersa. A hoge textile mill has been built in Tashkent, a mixed woollen mill in Baranul, a large shoe factory in Note-thirsk and a number of glass works in Byelo russia and the Donetz Basin. Large textile mills have been built in Lemnakan, Thibiss, Kutovobad, Terghana and elsewhere, and outhers were in course of construction.

Soviet light industry is striding rapidly ahead—lts gross utput (calculated in 1926-27 prices) rose from 3,235,000,000 1° in 1913 to 18 152 000 000 roubles in 1937—an increase force 460 per cent. The number of workers employed in the light industries grew in the same period from 791 900 to 1,837,000. Among the new workers, engineers and technicians there are tons of thousands of men and women belonging to the non-Russian unitouslities of the USSR to whom machine industry, was pratically maknown in Tarist days:

Labour productivity is steadily riving. Whereas in 1913 the value of the average output per worker in light industry was 4070 roubles. In 1937 it was 9690 roubles this increase of over 1.0 per cent being achieved even though the wriving day him been reduced from ten or eleven hour in Tsarist times to sixen functs today.

2 Cotton is the oldest and bigget to file high undustries. In 1915, the total output of all the cotton mills in the country was 2 110 000 000 yds. by 1958 at had risen to 5 787,000 000 yds. The cotton industry employ. 755, 200 is orkers, 67 per cent of whom are women.

The linen industry increased its output from 130 000,000 pds in 1913 to 292 000 000 pds in 1939

In 1913 Tsarist Russia produced 8 300 000 pairs of factory made shoes the output in the Soviet Union in 1938 nas 189 500 000 pairs or nearly 23 times as much. In 1933 three of the largest Soviet shoe factories—the Skorokhod Factory in Leningrad, the Pairs Commune Factory in Moscow and the Mikoyan Factory in Rostow on Dont—alone produced 39,400 000 pairs or nearly five times the total output of all the shoe factories in Tsarist Russia in 1913

The cutput of factory made kent goods and of clothing has also increased mimensely

A big industry has been built up for the primary treatment of hemp and flax. The production of cottonine and rayon has also made immense studes.

The output of leather substitutes has increased more than eighten times during the last even years (1931 to 1938). Natural rubber as a leather substitute is now entirely replaced by synthetic rubber. The Soviet Union formerly had no home supply of natural rubber, but it has made up this deficiency by building a log synthetic rubber industry, thus ensuring itself a subscient supply of this important product. In addition the cultivation of rubber hearing plants is being developed on an extensive scale.

The rapid expansion of the sources of raw material for the light industries is strikingly shown in the case of cotton growing. In Tharrit times cotton was grown only in the Central Assatic part of Russia. Now it has been introduced in Karakhetar, Transacauscat, the Ultraine and other southern districts, including some parts of the R S F S R—dor instance, the Krasnodar Territory, the Cimean Republic, the Daghetar Republic and the Stalingrad Region. The gross cotton crop in the U S S R in 1933 was 2.000 000 tons, as against 74,0,000 tons in 1913. In the U S S R cotton is culmisted faither north than in any other country the plantations reaching the 48th parallel. The Societ textile industry is no longer dependent on imported raw moterial and uses exclusively home groun cotton.

No middlemen stand between the cotton growers, organized in their collective farms, and the industry, which is State owned the crop is sold directly to Government

Hundreds of cotton growing collective farms each had an income of over a million roubles in 1938. In the fablanti District, Ubekistan, alone there are fifty of these millionaire collective farms, between them they netted 83,500,000 roubles for their cotton crop of which 42,000 000 roubles consisted of Government bonues for deliveries over and above the plan

and for extra grade cotton Fifty cotton growing collective farms in the Andizhan District Lzbekistan also netted incomes of over a million roubles each as did forty collective farms in Armenia

3 Notable is the Stalin Collective Farm in the Yangi Kurgan District Dabekistan which delivered 162 tons of Egyptian cotton from every acre of its planiation receiving over 3000 000 roubles in bonuses alone

In the Voroshilov Collectuse Farm (Assum Izmailovo District Azerbaijan) two teams beaded by Kurbanova and Nerimota obtained a cr p of 61 tons of cotton from every acre of land Agja Aheva a team leader in the Dimitrov Collective Farm Nirovebad District and a member of the Supreme Soviet of the Azerbaijan Republic picked 426 tons of cotton from an area of 74 acres. Her year s carnings were 10 000 roubles in eash in addition to produce

The technical reequipment of the Soviet factories de manded workers of higher knowledge and qualifications. The Soviet Government established a minimum of technical know ledge required of all workers varying with the different Professions and trades and set up an extensive system of reducational and training courses to impart this knowledge and professional skill. In 1937 188 560 people employed in the light industries attended spare time technical minimum courses conducted at the expense of the State sand in that year 30 100 workers passed the State tentical examinations in their various trades and professions. In addition the factories offer their workers extensive facilities for higher technical training—schools for foremen assistant foremen and Stakknowner.

In Tsarist Russia there were very few engineers in factories that now come under the category of light industries Women

as 85,000 pairs daily Now he is Assistant People's Commissar of Light Industry of the USSR Sometanin is a member of the Supreme Soviet of the USSR.

In 1938 the volume of State, so operative and collective, farm retail trade reached 162 973,500,000 rubles, as against 61 239,200,600 rubles in 1933. The sales of high grade goods have increased considerably. The sales of cotton fabrics by the State and co operative stores amounted to 5,500,000,000 rubles in 1937, as against 2,100,000,000 rubles in 1922—a 100 per cent increase, clothing sales totalled 6,600,000,000 rubles—a 90 per cent increase, kint goods sales totalled 2,300,000,000 rubles—a 130 per cent increase, and sales of Gottwart, 4,100,000,000 rubles, an increase of 170 per cent.

This increase in the volume of trade is to be attributed to the rising standard of living of the population

In the USSR unemployment has been totally eliminated sharply increased, which means a corresponding increase in the average family income. At the same time the average family income. At the same time the average samely income. At the same time the average mages of workers in the cotton industry increased, better 1928 and 1938, by 369 per cent in the linen industry b) 373 per cent, in the wool undustry by 260 per cent, in the salk industry by 261 per cent, in the kint goods industry by 201 per cent, and the flather and show industry by 200 per cent, and in the glassware industry by 288 per tent. The average monthly carnings of many shock workers and Stathanouties are as much as 1,000 rubbes and over

To the real earnings of Soviet workers must be added the State expenditures for the education of their children, for the workers' recreation and vacations, for cultural services, medical services, security in old age, and so on. These services rendered by the State, free of charge, amount on the average to about 22 per cent of the income of the worker a family

Inds, which are controlled by the trade unions. In 1938 insurance benefits paid by the Moscow and Leningrad Cotton Workers' Union amounted to 108,600,000 rubles. Of this sum 31,500,000 rubles were spent on payment of sick benefits, 28,300,000 rubles were paid to women employees in maternity beaefits and 4350,000 rubles for the acquisition of layettes and as nursing grants, 3,150,000 rubles were spent on extra school services for workers' children, 2500,000 rubles on grants to parents, 5,850 00 rubles on the construction and upkeep of Young Pioneer camps and children annatoria, 2,450,000 rubles on dietettic feeding, 10,440,000 rubles on trest homes, sanatoria and health resorts 1,000,000 rubles on trest homes, sanatoria and health resorts 1,000,000 rubles on lacilities for sports, mountain climbing, etc., and 5,300,000 rubles on vibiles on vibiles on vibiles on public on rubles on trest homes, such or the second public on the second public o

In Tearist times the Russian peasants, because of their poverty, bought very lutle manufactured goods. Their clothes and linen were home spun, on primurve looms, and home woven. Leather shoes were considered a luxury, most of the peasants wore bast shoes, wrapping their legs in strips of coarse linen kept in place by string. Socks and stockings were practically unknown in the Russian village.

Nowadays the peasants have become collective farmers, and the majority of them dress in the town fashion. The younger people even dress smartly, country girls are buying good shoes, stockings and stylish dresses.

The rising standard of hving of the people of the USSR is creating a growing demand for manufactured goods, and,

in spite of the big increase in the production of fabrics, footnear and kini goods the output does not yet cover the demand

Under the Third Five Year Plan the output of various con umers goods was to be mercased by 50 to 100 per cent. The year 1912 was to show an output of 5341 000 000 dist of cotton fabrics (42 per cent more than in 1937) and 525 000 000 pairs of leather shoes (43 per cent more than in 1937). The output of woollen cloth will be 67 per cert more than in 1937.

There would be a big increase in the outjut of textile machinery. The mills would be equipped with the most up to date machinery including continuous process mach nesgutomatic looms, etc.

Further progress was envisaged in the Ihird Five Year Plan with respect to bringin, the light industries closer to the sources of raw material and fuel. A number of new textile mills were to be started including cotion mills in Barnaul Acoosibits and the Kumetsk Basin a spinning mill in Leninakan the second section of the Tashkent Textile Vill and cloth mills in Kieva and Semipalation. A number of textile mills were to be erected in Western Siberia and the Kazakh Republic Numbers of kind goods and hosery factories, silk mills, flax mills tanneries and shoe factories were also to be built throughout the country.

The Third Five Year Plan was to bring about a further rise in the standard of living of the people of the U.S Siy by more fully meeting the demand for all kinds of goods and produce and for wider material and cultural services.

## SOVIET REPUBLICS OF NON-RUSSIAN NATIONALITIES-INDUSTRIAL PROGRESS

## M PAPYAN

1 Own industry 2 Tempestuous rate of development. 3. Increase in native workers 4 In Armenia

More than three quarters of the entire industry of Tearist Russia was concentrated in its central provinces in the Ukraine and in the Baku oil district

The non Russian borderlands of the Empire were looked gupon by Russian and foreign capitalists alike as nothing more than sources of raw material and markets for the sale of manufactured goods

When it came into power the Soviet Government abolished the regime of national oppression and established the equility of all nationalities. To give effect to this national policy, it had to put an end in the shortest possible time, to the contourne and cultural backwardness of the nationalities formerly oppressed by Tearism.

Accordingly the Communist Party and the Soviet Government designed and enacted a series of measures which mabled the districts inhabited by the backward nationalities to overtake the more developed central regions of Russia.

<sup>\*</sup>The most comprehensive and authoritative study of the Communia approach to these problems is to be found in Marxism and the Not and and Colomol Question by Joseph Stalin (Lawrence & Writart Ltd 3 6 net)

Many industrialization measures were included. During the first two Five Year Plan periods (1928-37) the former "borderlands" of the country witnessed the construction of numerous industrial establishments and the growth of large, forces of workers and professional people of nature video Without all this national equality would be but a sham, an emoty meaningless batrase

The Republics of the non-Russian nationalities comprised in the USSR have fundamentally recognized their national economy and have attained gigantic industrial expansion. From agrarian adjuncts serving as raw material bases for the industries of Ru via proper, they have been turned into mighty centres of Socialist industry. Vital centres of the iron and steel coal, oil machine building and electric power industries have eyening up in the Soviet East.

1 There is no Republic or region of a non Russian notality in the USSR that has not founded its oun industry daring the lost ten years. This is equally true of both the large and the small Republics and regions

Let us for example consider the Bashkirian Autonomous Soriet Socialists Republis whose dimensions are relatively small. The funds invested in the national economy of Bashkirian in 1932 alone equalled the total sum invested in this region by Tsarist Russia in half a century. During the Second Five Year Plain period (1933-37) capital investments in the mational economy of this Republic exceeded 1000 000 000 rubles. Bashkiria which before the Resolution and pratically no industrial enterprises at all his now built up score of new factories including the well known Ust. Motor Works and an oil cracking plant. The Belorets! and Daimas. Works have been totally reconstructed and transferred mit modern enterprises. This republic has also been

found to contain oil, and the Ishinabai and Tuimazy oil fields are already being successfully operated

Let us now turn to another republic hazakistan—one of the else a constituent llejublics of the Seviet Union This is a vest country occupying a telestory of 1060,000 squides and is exceedingly rich in valuable minerals. It includes the huge Finds on fields second in size to the flexibilities and is exceedingly rich in valuable minerals. It fields its copper deposits on structure the flexibilities and deposits and per cent of the total know a deposits in the ISSR kazakistan bis the huge coal deposits. Recent prospecting revealed minimum plought the deposits and chromitie beds. They im another these times world. The metal content of the Mrit g ld salver zinc and copper ores is of the highest.

Yet until the Revolution all these riches lay luried in the ground unfouched hazakirativa was that kward region whose nomand population were engaged almost exclusively in rather primitive cattle breeding. Aleat and leather were the sole products they provided for Russia central regions. There were no industrial enterprises of any account no rathroad and no telegraph or telephone service.

Today the Kazakh Soviet Socialist Republic r presents a land of new constructions. A large coal industry has been created here with Karigunda as its critire. Numerous of fields ine being exploited, the excition of the gigantic Balkhash capies smelling works has been completed the Ridder Lead Works has been caturely inconstincted, and a huge lead factors the giant of the Soviet Union's lead industry has been exceed at Chimkent while several new chemical and other received at Chimkent while several new chemical and other works have been added to the Republic's industrial plant.

2 The tempestuous rate of developm at of the Republic's industries may be judged by the fact that during the period

of the Second Five Year Plan lead smelting in Kazakhstau increased twelve fold and in 1937 constituted 75 3 per cent of the total lead smelted in the Soviet Union, as against 30 72 per cent in 1932.

A readless country in the past, hazakhstan, under Soviet rule, has been covered with a whole network of overland communication lines including nuncious railroads whose nuleage totals 4,160 miles, while 3 700 miles of waterways have been made available for navigation

Bordering on Kazaklistan is Uzbekistan one of the Soviet Socialist Republics situated in Central Asia In the past, this Republic like all the other borderlands inhabited by non Russian peoples, was a Tsarist colony It supplied the central regions of the Empire with cotton, which the Tsarist authorities did not allow to be woven or even soun in the regroups where it was produced. Today Uzbekistan has a number of big textile mills. Special mention must be made of the huge plant in Tashkent the Republic's capital, which as equipped with 112,000 spindles and 3 246 looms. A second section of this plant is now under construction, upon completion of which the plant will have in operation 211,000 spindles and 6952 looms Many electric power stations, plants manufacturing agricultural machinery and implements, silk reeling mills clothing factories and other industrial establishments have also been built in Uzbekistan. Not far from Tashkent on the banks of the Churchik River a combined plant producing electricity and chemical products is now under construction. It consists of a hydro electric power generator with a capacity of 7-0000 kilowatts which will supply cheap energy to the industrial establishments of Takshkent and of a fertilizer factors whose products will go enrich the Repullic's cotton fields

3 The industrial development of Libekistan has led to a considerable increase in the number of the republics matter workers and professionals. Over 1000000 people are now employed in its large scale industries and on construction. More than half of these are skilled and semi-skilled Libekisworkers. An Uzliek technical intelligent a—technicians and engineers—has also come into existence.

Similar records of rehavement may be exhibited by the other non Russian nationalities of the USSR Industry is rapidly expanding not only in these Republics which for merly were agrarian colonies pure and simple but also in Azerbaijan and the Ukraine which even before the Revolution had quite a few industrial establishments

In Azervaujan, the old Baku oil industry dating back from pre-resolutionary days has been entirely reor canized. As a result, the annual oil yield has increased three times in comparison with 1913, the gas yield 69 times and the production of gasoline 48 times. In recent years a number of new oil fields have been prospected and are now being extensively exploited. In 1938 the new fields and the new wells on the old fields accounted for 33 per cent of the total oil output.

The Donetz coal basin, the chief purveyor of coal for the whole country before the Revolution is located in the Ukraine. Now with the development of the Kuznersk coal fields in Siberia, the Karaganda coal fields in Kazakhstan and local coal fields in Central Visa Georgia, the Fai Fait and in other districts, the Donetz basin's proportionate share and in other districts, the Donetz basin's proportionate share in the Soviet Union's output of coal has, naturally, dimmished However, as far as absolute figures go, the imming of coal in the Donetz basin is increasing from war to year and has more than it piled in comparison with prewar time. Today,

the Ukraiman Soviet Socialist Republic produces twice as much coal as all Poland

The Ukrame also had on iron and steel industry before the Revolution. This too has been thoroughly reconstructed during the years of the Soviet rule. In place of the old black and open hearth furnaces and of the old rolling mills, new thoroughly modernized causement has been installed

Many first class new works such as the Zaporozine Steel Mill the Azov Steel Mill, the Krison Rog plant and others, have ben exceed During the years of the second Five Year Plan alone 11933 371 the Ukraine's output of pig iron was more than doubled One paint-the Kirov iron and steel mill in Makeveyka-produces twice as much pig iron as alf the iron and steel mills in Poland put together. During this same period the production of steel in the Ukrain almost tripled Litrargen oully produce as much steel approally as Japan and Poland put together In comparison with 1913 the machine building industry in the Ukraine has grown thirty fold and the generation of electric power 183 fold The Lenin Hydro Electric Power Station on the Diseperbuilt under the Soviet rule alone supplies more electric power than did all the power houses of Tsarist Russia ta the aggregate

4 The author of these lines is an Armenian and it is efore only natural that he should want to illustrate the 'trial expansion in the Republics of the non-Russian ationalities by the example of Armenia

Until 1911 the industry of Armenia, in the main an arian country, was extremely backward and even primitivefew facts sees were hardly more than handicraft shopNo-t developed at that time were the copper industry, the production of alcoholic beverages and cotton ginning by handieraft methods

The mexhaustible natural resources of this mountainous country with its rivers and lakes and its colosial reserves of valuable numerals were practically unexploited

All the electric power in Armenia u ed to be supplied by two hidro electric power stations with a total capacity of 250 kilonatts

During the World War (191116) and the years in which the Aimenian counter resolutionary Party of the Dashnaks was in power (1918/20). Armeina's weak industry was allogether runned.

Only Soviet rule established in Armenia on November 29, 1920 put an end to its economic prostration. The initial period of economic resival has been followed by the Socialist industrialization of its national economy.

A number of hydroelectric power stations, with an aggregate annual output of 350 000,000 kilowatthours have been built. All these are linked up into a single chain which makes it possible to regulate the flow of eletric power.

Extensive work is now under way to utilize the abundant waters of the huge Sevan Lake situated high in the mountains, for which purpose a number of hydro electric power stations are erected on the cascade system along the Zanga River

At the same time the water discharged by the turbines will go to irrigate more than 321 000 acres of fertile soil

Construction of water plants has made possible the extensive development of industry. New branches of industry

have ben launched, and the old branches have been fundamentally reconstructed. Armenta's copper industry has made big strides. At present the annual output of the Alaxerd and Kafan copper smelting works amounts to 10 000 tons.

The Republic also has large chemical works. In Erevan, the capital of Armenia a lugge synthetic rubber works his been creeted Some time ago a new center factory producing 114 000 tons of high quality material annually has sprung up on the Davahin sands at the foot of a long range of mountains rich in limestone.

A machine building plant manufacturing engines and compressors is another addition to the Republic's industries

A new tobacco factory manufactures 1700 000 000 cigarettes a year Armena's canneries yearly put out 20 000 000 cann of preserved frusts and vegetables. The out put of wine presses and distilleries, meat packing plants and other establishments of the food industry has also increased to a marked extent.

Two cotton gameries have been built to deal with the rich cotton crops. Their capacity is 22 000 tons of cotton annually.

A huge textile plant with large new epinning and weaving wills forms the nucleus of a regular little town within the of Leninakan. This plant has 117 000 spindles and oduces 33 000 000 yards of textiles a year.

The leather and shoe industry has also undergone con-'le development

Erevan, which only recently used to amaze the foreign t by its winding, typically Asiatic streets and clay

#### CIVIL AVIATION

RV

#### V MOLOKOV

r Commercial 2 5.782 miles of airways. 3 Trunk lines. 4 First place in freight traffic. 5 Locust menace climinated 6 Polar service 7 Expert flyers 8 Arrcraft production. 9 World records

Civil aviation, besides being an important means of interpolation is put to a variety of other uses in the Soviet Union. Thus it is vadely employed in agriculture, in forestry, in fishing and animal trapping in surveying and prospecting, in the sphere of public health in the exploration of the vast areas of the Soviet Article regions, etc.

But civil aviation in the USSR has attained its greated development as a means of transportation and communication. In the Soviet Union, where all the functions of transportation are co-ordinated in a single State plan, it has been possible to organize the transport system and plan its development on the basis of a thorough study of economic factors.

- 1 Commercial awation has become an effective integral it of the entire transport system of the U.S.S.R. and works
  - t of the entire transport system of the U.S.S.R. and works thy in cooperation with the other forms of transportation.

Systematic construction of Soviet airlines was begun in 23 After the first airline, Moscow Gorky (formerly Novgorod), had started operation, the Soviet Union ched the development of airlines in the roadless regions rati

At that time this work was attended with difficulties resulting from the fact that the Soviet aircraft industry was but poorly developed and that there was a dearth of personal with operating experience

4 Still, in the years from 1923 to 1928, ie towards the beginning of the First Five Year Plan period the network of airways in the USSR had increased in length from 2604 to 5,782 miles

The construction of civil airlines assumed large proportions during the period of the First Fine Year Plan which, as its well known was fulfilled in four years. It was continued on even a larger scale during the period of the Second Five Year Plan (1933-87).

As a result of this construction which has gone on continuously for many years the entire yest territory of the Soviet Union has been covered with a wide network of airlines.

The following table shows the growth of this network

е	following	table	shows	the	growth of this network
					Total length
	Years				of airlines, in miles
	1923				260
	1928				5 782
	1932				19 778
	1933				33 046
	1934				42 284
	1935				47 900
	1936				\$4 300
	1937				65 888
	1938				70 918

The planning and geographic distribution of the airlines in the USSR aims primarily to meet the requirements of national economy. The main talk to be considered is that of building up a system of rapid transportation and of linking the central sections of the country with important industrial centres and with the outlying districts.

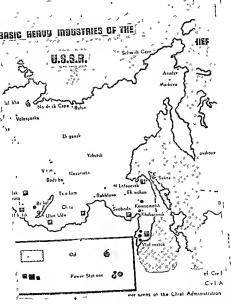
3 The main airlines operated by the Civil Aviations service of the USSR are the three trunk lines. Mos ow Madwostok, Moscow Thilist and Moscow Tashkent.

The trush line Moscow Vladnostok links the USSII in Europe and its centre with the distant borderlands in the cart, as well as with the important entre situated en route? Azzan, Szerdlovsk. Voxosibryk. Ifkultsk Khalizrovsk, etc. A number of smaller artimes of great economic importance branch off from the trunk line. One of these is the Irkutsk Yakutsk line, which is traversed in bydroplanes following the course of the Lena River. This line is of vast importance as a means of traffic and communication with the Yakut Republic. The Khalizrovsk Alexandrovsk and Khalizrovsk Okha architect shirth connect the manufand with the Island of Sakhalin are of equal importance.

Moscow Leningrad Moscow Khaikov Moscow Kies Ode a, Moscow Vinsk, and many others. This makes it possible to organize long distance through traffic for instance, from Bedorussia and the Ukraine to the Lar East from Trans-aucusia the Ural- and Suberia from Central Asia to the central atom of the Uses.

The main line, link up in Moscow with the authori

The Voscos Stock-John line which was opened in 19-27, has enhanced the international significance of the eastern trurk line. The Voscos Stockholm line which is operated jointly by the USS R and the Swedy h A.B.Y. Company, connects with the arthus of Holfand Demmats, Beljamin.





Great Britain and France The Moscow Vladivostok trunk line thus becomes the potential air route linking the shores of the Pacific and the Atlantic

The Moscow Thilis trunk line links the centre of the Soviet Union with the Ukrame, North Caucasus and Trans caucasia. A number of airlines branch off from this trunk line in the directions. Thilis Eresan. Thilis Sukhumi, Thilis Baku and others connecting the Georgian. Armenjan and Arethajan Republic.

The Ukraine also has a wide network of airlines including, among others the following. Khaikov Dniepropeticy & Odessa Odessa Kherson Kharkov Mariupol Berdyansk. Aliar koy Kiev, and Kiex Rostov on Don

The Moscow Tashkent trunk line links the centre of the

It also covers the territory of northern Kazakhstan

The Tashkent Kabul line connects the USSR with Afghanistan

Many of the Central Asia arribnes traversi desirt and mountain country. The distance between Stalinabad and Khorog, for instance usually takes thirty days to travel by land. An airplane covers this distance in two hours.

An airline was recently put into operation between Moscow and Alma Ata This is another trunk line, connecting the capital of the Soviet Umon with the Kazakh Repul lie

Airline communication has been rapidly developing in the vast territory of the Soviet North, where the airlines serve the purpole of helping to master the Great Northura Scilinuis. The extension of the network of airlines in the USSR has been attended by a growth of the number of passengers and of the volume of freight carried by aircraft, as shown in the following table.

## Passengers and Freight carried

	B		
Years	Passengera	Vfail	Freight and
1923	200	10	baggage 10
1928	7,000	100	100
1932	27,200	400	400
1933	42,800	2,000	1,400
1934	63,000	3,800	6,700
1935	106,700	6,500	10,200
1936	211,200	7,900	35,000
1937	178,300	9,100	36,900
1938	287,200	10,800	43,600

The atrylane has definitely become a part of the life, of the Soviet citizens. In addition to carrying pavengers and mail the atrylanes of the Civil Aviation Service transport spare parts of agricultural and other machines, zare elements precious metals, precision metatruments, persishable goods, medicanes, various apparatus and instruments, concentrated food-site.

- 4 The USSR holds first place in the world for freight traffic by air. The utilization of payload on civil airplanes amounts to 86 per cent of the entire payload capacity of the Civil Air Fleet of the USSR.
- In the Soviet Union airplanes are widely employed for the purpose of destroying field pests and of protecting f = from fires. In 1928 an area of 79,000 acres of cultivated fields and of forests was sprayed with chemicals from airplanes. In 1938 airplanes engaged in combating field and forest pests sprayed an area of 1,235 000 acres.

a. If the help of airplanes the locust has been sluminated from its breeding places in Azerbaijan Turk menta and a number of other localities.

There has been a steady increase in the area photographic arch year from airplanes for the purposes of prospecting and cartography. Aerial photography is also increasingly used in connection with road building and the reconstruction of

Airplanes are employed to an ever in reasing extent to convey specialists in cases when urgent medical assistance is acceded in remote places, and in conveying patients who are an urgent need of special hospital accommodations

In 1938 arrplanes assisted in the destruction of the larvae of the malacia mosquito on an area of more than 7,410,000 acres.

di 6 The USSR has ereated a special polar aviation service Its functions are to guide ships along the Great Northern Sea Route, to reconnoter for shoals of fish and marine animals, to study the meteorological and acc conditions in the Arche, to furnish material for maps, and, finally, to provide means of transportation and communication.

The Soviet Civil Anation Service is well staffed with a fine flying personnel. Many flyers and engineers of the Civil Aviation Service have been awarded high orders of ment by the Government. The leading poets in the Civil Aviation Service are occupied by first class aviation experts. Thus for instance, the post of Chief of the Polar Aviation Service is raided by one of the conquerors of the North Pole—Pilot I Mazurii, Hero of the Soviet Linion the post of Chief of the Civil Aviation Service is held by the present writer, the post of Chief Inspector of the Civil Aviation Service, by Pilot M. Slepnes, Hero of the Soviet Linion.

7 A great number of outstanding flights bear aitness to the superior still of the Soviet avaiors and the high level of development of aeronauties in the Soviet Union

We may mention the flights made by M Vodopyanov, Levanevsky M Slepnev I Doronin P Lyapidevsky, N ka manin and other pilots, all Heroes of the Soviet Union, who saved the 104 members of the brave Chelvustin crew, the flights in the Arctic made by Fahrikh Makhetkin and others In 1936 V Chkalos G Baidukos and A Belyakov accom plished their flight along the extremely difficult route, Moscow Arene Ocean Komehatka Island of Ldd (now Chkalov Island) In the following year the heron onslaught on the North Poltwas crowned with success. A squadron of heavy planes piloted In M Vodopvanov V Wolokov A Alexeyev P Golovius and I Mazuruk made the flight from Moscow to the North Pole and moreover the participants of this expedition headed) by Academician Otto Schmidt succeeded in consolidation their victory over the North Pole hy setting up Papanin's scientific research station. Shortly after that feat V Chkalov-G Baidukov and A Belyakov made their non stop flight from Muscow to the USA via the North Pole soon followed by M Gromov A Yumashev, and S Danilin who accomplished a similar transpolar flight from Moscow to the U.S.A. Finally we may mention the latest record breaking flights from Moscow

the Far Fast made by Kokkinaki in the airplane Moscow and by the women flyers V Grazodubova, P Ossipenko an I

bl Raskova in the airplane Rodina

5 These achievements were made possible ly the general? advance of Socialist economy and by the ancessful accounplishment of the first two Five Year Plans as a result of which the U.S.S.IL has created its own powerful aircraft

In the backward Russian empire of the Tears there was no arcraft industry whatever soviet aviation at first depend of the Irist Tive Year Plan period the young Soviet aircraft industry had so far developed that it was able to supply the Air Fleet of the U.S.S.R. with planes and motors of domestic production.

The achievements of the Soviet aircraft industry particularly worth noting include the designing and manufacture of the aniplane TSAGI Q25. It was in airplanes of this modethat V Chkalov and M Gromov made their record breaking flights over the North Pole. At the Fifteenth International Aeronautical Exposition in Paris this plane deservedly occupied a prominent place among the foremost exhibits

In designing new airplanes the Soviet aircraft industry fetures to improve their fundamental qualities—speed, ceiling, lange, economy and carrying capacity

The Soviet aircraft industry has scored considerable successes in motor construction as rell. Various types of motors have been created, with a capacity ranging from 109 to 1250 hip.

The Soviet aircraft industry has also mastered the production of special aviation instruments, such as gyroscopic compasses radio goniometers, automatic pilots etc.

The speed of the auplanes which the Soviet aircraft pudistry turns out for operation on the airlines of the USSR is constantly increasing. The new models include the ten passenger plane PS 35, the toche passenger plane PS 30 the tenthy passenger plane PS 34 the high speed mail plane PS 40 and others. The PS 35, PS 40 and PS 34 models have retract table landing gears. The landing gears for the PS 59 is increased.

The Soviet Government received a meagie heritage from the Tearst regime War and intervention led to the destruction of some 4500 railway bridges with a total length of over 60 miles The Murman railway, the Amur railway and other lines, construction of which was begun during the World War, were never brought to completion by the Tsarist Government Practically no repair work was done for seven or eight years, railway ties were not changed and the road bed was not renovated Thousands of miles of lines, numerous water towers and station buildings were reduced to ruins Dilapidated cars and battered locomotives filled the sidings of raliway junctions Traffic declined heavily Average daily car loading fell from 27,400 in 1913 to 6 200 in 1918, which was only 22 d per cent of the 1913 figure During the same period the volume of traffic declined from 40,009,000,000 ton miles to 8 700 000,000 ton miles

It should be added that of the 43,798 miles of railways in Tearist Russia in 1913, over 7,000 miles were ceded to Poland, Lithuania and other border states The USSR, was left with 36,300 miles of line

The Soviet Government left no stone unturned in its efforts to revise the railway system without resorting to foreign loans

The revolutionary enthusiasm of the masses, the splenresponse of the railway workers to the appeal of the Government, their labour enthusiasm and improved thing conditions made at possible to surpass the pre-war of traffs. by 1926.27

2 Car loadings increased steadily. In 1913 average 1, car loadings amounted to 27400 cars, in 1918 this 2 dropped to 6,200 but rose to 28800 in 1937. Freight traffic increased at an even peater rate. In 1913 the volume, of freight traffic amounted to 40,900,000,000 ton miles, in 1918 it dropped to 8,700,000,000 ton miles but reached 51,200,000,000 ton miles in 1927 and has continued to advance at an even higher rate in the subsequent years.

The Soviet railways experienced a particularly rapid growth in the period between 1928 and 1947. In 1928 the Soviet Government adopted its First Five Year Plan for the economic development of the country which laid down a definite programme of expansion for each year. This plan was fulfilled ahead of schedule The Second Tive Year Plan (1933 37) was likewise fulfilled successfully. In 1938 the Soviet Union began the fulfilment of its Third Five Year Plan which was to be completed in 1942. The Five Year Plans stipulate definite programmes for each branch of industry and agriculture Every factors, mill railway and denot is given a specific programme for the five year period The nation judges the quality of work of industrial establish ments and their general efficiency by the fulfilment of their production plans. In this way the work of every enterprise is under the constant control of the people and the fulfilment of production schedules becomes a matter of honour for the workers of every factory

The planned development of railways has led to a marked improvement in the operation of the railways. By the end of the First Five Year Plan period average dealty cailoadings grew to 51,400 and to 89,800 by 1937. By the beginning of the "Third Five Year Plan period carloadings on Soviet tailroads were over three times as high as before the wai.

The volume of freight shipped increased by leaps and bounds—from 156,200 000 tous in 1928 to 267 900 000 tons at the end of the First Five Lear Plan

period and \$17.300,000 tons in the last year of the Second Fire Year Plan period. Societ railways transported almost four times as many passengers in 1937 as in 1932.

Coal, oil ore, and metal account for 42 per cent of the aggregate volume of freight traffs. Taking the figures for 1928 as 100, shopments of coal and coke amounted to 333 per cent in 1937, ore to 435 per cent, metal to 460 per cent and timber to 270 per cent. These figures testif; to the tremendom development of industry in the Soviet Union

The freight density of Soviet railways exceeds that of any other country, as may be seen from the following table :

Traffic per mile of line in operation (in ton miles)

	1913	1929	1936	1937	
LSSR	639 000	909,000	2,416 000	2,539,000	,
Germany	733 000	911,000	722,000		
Great Britain	_	589,000	514,000	~~	

Such is the progress made by the Soviet railways in the

The introduction of Dissel-electric locomotives which were unknown in pre-resolutionary Russia, marks a great step forward in Soviet railway engineering. Direct electric locomotives of the "EFL" and "VVI 20" (V Molotov) type have proved very efficient and are being used extensively on the Central Asiatic railways which pass over and country.

3 Great progress can also be recorded in the electrification of the railways. This work was facilitated by the fulfilment of the national electrification plan adopted by the Soviet Government on Lenua's initiative

There were no electric railways in Russia prior to the Revolution The first electric line was built in 1926, it was suburban line between Baku and Sabunchi. At present the USSR has 1,116 miles of electrified railway, of which 198 miles are suburban lines and the remainder trink lines

The introduction of electric traction necessisted the construction of high power electric locomotives. This problem was soliced by Soviet industry, which has provided the railways with the "VL" (V Lenin) electric locomotive for passenger and freight traffic, the "SS" locomotive for freight and the "PB" for passenger traffic. All these locomotives use 3,000 volt direct current. The "PB" locomotive can develop a running speed of 87 miles. The "VL" 53 miles and the "SS" 34 miles were hour.

4 The latest unnovation in Sowiet railway technique is the new "80" (Sergo Orjonikudze) condenser locomotive The condensing installation of this locomotive converts the steam discharged by the cylinders into water to be used again for ateam. The original water simply can pass through the condensation process from 10 to 13 times, providing a steady flow of pure di-silled water for the boffers. The "SO" New lines are being built at a more rapid pace. Every year thousands of imiles of new raifroad lines are put into operation. During the last five years approximately 3,000 miles of second tracks were laid and about 3,700 miles of existing line were reconstructed. During the same period over 62,000 miles of line were overhauled and repaired.

So tet rails as a have been provided with 54 trigh lasing and repair stations equipped with the latest machinery. This makes it possible to perform repairs much more quickly with the use of ballasting machines, track graders, pneumatic elever naching machines, motor rail tacks, etc.

6 Railways are never closed down in the U.S.S.M. for lack of traffic, and the total length of line is steadily morealing. Between 1913 and 1936 the Source Union built over 9,000 miles of new line, while many additional lines have been completed. The rapid growth of Source trailroads is graphically demonstrated by the following table.

Accresate mileage of Societ railness

1913	36 30
1929	47,70
1932	50,733
1936	a2 700

The development of the Soviet railway system was possible because the Soviet Government devoted much attention to training highly skilled engineers and workers for all branches of the system.

7 The number of includes training railway engineers has increased wifold since the resolution, the number of railway colleges has doubled and the number of technical and apprentice-tip schools has increased almost electrifold. During the years of the Second Five Year Plan period Soviet institutes trained over 10,000 rankay engineers and 34 000 technicians. The institutes of rankay engineering now have a student body of over 21,000 and employ some 2 000 professors and teachers. Many thousand people attend rankay colleges and apprenticeship schools

An extensive network of study courses and classes has been established to proude technical training to railway workers after norking hours. In 1938 these courses were completed by one million railroad workers. Technical train ing centres, offering courses in popular technology and hundreds of technical libraries and laboratories are doing work of first rate importance in raising the shill and know ledge of the huge army of railway workers.

This work is already bearing fruit. The Stakhanov and Krivonoss movement a movement of people who have mastered their job to perfection, has spread far and vide diroughout the entire railway system of the country Locomotive derivers like Arinonoss Ogne, Pritskaus and Mokaro have found the ways and means of raising the efficiency of locomotives. They have increased running speeds and the weight of trains, and are running their locomotives longer distances without repairs. Sunning foremen Krasino, Nohukhar and others have deused methods of making up trains in a shorter space of time and improved the methods of marchalling wagons. The methods introduced by these and others foremest norders have more than doubled labour productivis.

The example set by Krnonoss and his followers served as a stimulus to all railman norders. The Krnonoss more ment, a movement for technical progress and higher efficiency has grown to be a mass movement. At present there are

## INLAND WATERWAYS AND TRANSPORT

### BY

#### A BLIDMAN

- 2 248,400 miles of waterways 2. Investment of capital.
  3 Tanker fleet. 4 Machinery 5 Press interest.
  6. Women's role.
- 1 Two oceans and twelve seas wash the shores of the Novet Union. Its sea coast stretches for 26 703 miles. The vast expanse of the country is intersected by 500 000 nvers its inland water surface includes two seas and 100 000 lakes no country in the world can compare with the USSR in the number and might of its navigable inland waterwayer which agergate 248 400 miles.
- In Tearist Russa the length of the navigable waterways open for traffic (excluding invers serviceable for floating limber) was 27945 mides But only 22356 miles were equipped with flash signalling installations for the guidance of martners (though become and so forth) which were of a primitive quality hardly comparable to the installations now in use Under the Soviet Government the length of the navigable waterways (excluding those serviceable for floating timber) has increased by 37881 miles and now comprise 6326 miles.

The rivers of the Soviet Union are important not only as a means of traffic but they are at the same time a mighty source of electric power supply. As early as 1919, when the

Givil War was reging all over the country, work was begun on the first Souret hydro electric power plant on the Volkhez River, not fai from Lemngrad During the First Five-Year Plan period a gigantic dam was built across the Dineper River, in the Ukraine, which raised the level of the river by 123 feet. Prior to this the Dineper rapids barred navigation over a considerable stretch of the river, but with the completion of the dam the rapids disappeared and the river became navigable from its upper reaches to the Black Sea. A triple chamber loke allows for the prasage of craft. The Dineper Hydio Electric Power Plant with a capacity of 550,000 kilowatts generates more electric power than did all the electric power than did all the electric power than did all the electric power than the all the electric power than the did all the electric power plant in Tarist Russia.

Dams have been built on the Svir, near Leningrad, whe c a powerful hydro elective poner plant is now operating. Another hydro elective power plant was to be built here during the Third Five Year Plan period (1938-12)

In Karelia, outling through grante hills and virgin forest, a canal, 141 miles in length, was built in twenty months. This canal links the White Set with the Baltic Sea

Another feat of engineering, but far zoore complicated was the building of the Vioscow Volga Canal. Two hundred large works had to be built along its route of 795 miles Thisck works include eleven locks, eight earth filled dams seen spillnays, six floodgates, five pumping stations, eight hydro electric power stations, seven railnay bridges and twelve bridges for other traffic. The whole scheme was completed in four years.

In the building of the canal 170 excavators were coupled hundreds of locomotives motor shunters, concrete mixers, hydro monitors, thousands of conveyors and electric engines. Volga lines water now washes the walls of the

kremin in Moscoo. Formerly the Moscow River was very shallow and hardly suitable for river craft. Now it has been linked up with the great Volga thoroughlare. The water course from the capital to Lemngrad has been reduced by 665 miles and the distance to Gorky by 66 miles. The largest vessels can now sail the canal which can handle annually some 15000 000 tops of cargo in any outer direction.

2 The amount of capital smested in water transport is increasing with every year. Under the First Five Fear Plan 1 2:05 000 000 roubles were assigned to this branch of the national economy. The sum appropriated under the Second Five I car plan was 2:2:000 000 roubles. These sums vere expended on building a modern technically well equipped feed of fiver and ocean going vessels on refitting existing vessels, on the construction of new ports and reconstructing existing ports. New shipbuilding yards and dockyards are built in various parts of the country, while new equipmed was installed in the existing yards thus placing them of an equal footing with the us to date entertory.

The Soviet salvage organization Epron has been doing exceledint work there last fifteen years in raising shipwreaked or sunk vessels from the beds of sear, rivers and takes. Many a vessel that was sent to the hottom by the foreign involution that the court was been given a new leave of life due to the efficient work of Epron and is now ploughing the rivers and seas under the flag of its Socialist country.

The fleet of the Soviet merchant marine is rapidly mercasus, in size thanks to the new vessels that have been built log to the field many vessels were also ordered to be built or purchased abroad. The tonnage of the Souramerchant marine has increased nearly three and a half time-between 1923 and 1937. These vessels differ radically, from

abe type of ver el averaged 1,150 tons. At present the average pleadweight is around 3,000 tons.

3 The Souset Government has created a large and modern tanker fleet in the Caspian and Black Seas. The fleet of Soviet webreakers is the largest and most power ful in the world. In the winter months these vessels ensure a free passageway for ships entering and leaving all verbound ports and also maintain a regular service between. Murmansk, and Vladivostok along the Great Northern Set Route.

The Soviet river flotila is practically new During the two Five Year Plan periods 1e 1923 37 the carrying capa city of the fleet of river steamers and motor ships has almo t doubted while that of barses has trebled

Many new resuels have been added to the river transport service. These include steamers and motor ships ranging from 150 to 1,200 hp, cargo passenger boats from 200 to 800 hp, steamers having a deadweight of from 1,750 to 3,000 tons refrigerator and numerous motor boats. Many new barges have been built for carrying oil in bulk and dry goods with a carrying capacity of from 1,000 to 4000 tons. The Worcow Volga Canal maintains its own fleet of comfortable passenger motor ships of from 280 to 700 hp. The fleet of shallow draft motor boats for the lesser rivers is containly growing.

This has considerably cohunced river and sea shipments In comparison with the pre-war period the cargo carried by the Sortet water transport system during the Second Five Year plain period has increased 300 per cent. The freight durinover of the Soviet water transport system aggregated 300 000,000 tor miles in 1937.

In 1924 the freight turnover of sea\_oung vessels aggregated 3,000 000 tons. In 1937 it already exceeded 29 000 000 tons. During the last ten years dispinents of timber have increased eleven times. In 1938 some 19,000,000 tons of oil were shipmed by Soyett tankers.

The Soviet merchant marine has considerably increased its relative standing in the import and export trade. In 1929 Soviet vessels carried 10.3 per cent of the country's foreign trade. By 1930 this had already grown to 3.9 per cent

The Soviet flag can now be met in every port of the world and along all the main ocean and sea routes. Regular sailings are maintained between the USSR and the USA

The importance of water transport service as a meansof conveying passengers is borne out by the fact that in 1938 the fact of Soviet river steamers alone carried some, 67 000 000 passengers

During the last few years almost all the previously existing scaports and river wherees have been thoroughly reconstructed and brought up to date. Ports like Leningrad, Odessa Notorossist. Murmansl, Nikolayer. Poit Haruppel Baku Makhah hala Madrostok and Archangel have beefted out with new moorings portal cranes and other modern port facilities not to mention elevators and euld storage plants. New ports have come into being such as Onega Soroka. Kandalaksha Igarka. Narayan Mar. Nogaveto-Kara Bogaz Gol, Port Illivich and Otchemtchirs.

Antiquated treer shares and mooring hase been rebuilt and fitted out with new and up to date equipment. Such treer ports as Corks. "Salingtad Kies Dinepropertors's Astrakhan Rostros on Don. Perm. Novosilarsk, Archanzel's Moccos and Za proudre, have chain ged berond all recognition." Of the new river ports, Lenin Harbour on the Diseper River in the vicinity of the hydro electric power station, deserveparticular mention

4. The new machinery installed in the ports and har bours has given tise to new vocations, erane operators, con veyor belt operators, engine men electricians, chauffeurs mechanical engineers now supplant the longshoremen of former days. Engineers, technicians and executive personnell for the river and sea transport service are being trained by the Academy of the Water Transport System, three engineering colleges, 29 technical training schools and 20 workers' colleges. The number of people entolled in these schools and colleges totals 32,000. Apart from these educational establishments 60 schools are giving special vocational training to juveniles. A large network of central and local courses for Stakhanowites are training or raising the qualifications of machine operators, foremen, stevedores, dispatches and wharf superintendent.

With machinery as an auxiliary, the water transport workers are improving this machinery, making it work better, quicker, in a word, squeezing out of it all that is possible.

During the 1936 navigation sesson I was working in the coal harbour of the Kier port. The loading was done by means of a "Yanvarets" conveyor belt. The loading capacity for this type of conveyor was fixed at 32 tons per hour. But owing to various shight defects it was never possible to load more than 28 tons. I made a careful study of the conveyor belt. A simple innovation, proposed by me, had an immediate effect. The brigade to which I belonged began to fulfill the scheduled rate 100 per cent. Further improvements which I introduced enabled us to increase the coal loadings to 40 tons per hour. Naturalls, our earning

uncreased accordingly. We began to make 6 35 roubles an hour

Continuing the sort I had begun of improving the consero belt, I succeeded in bringing our loading up to \$50 tons of coal an hour. The conveyor belt hardly managed to cope with the amount of coal the men were shoveling into the "ading funnel. What I then did was to increase the speed the conveyor belt from 295 feet per second to 39 feet, "the sheares and lengthen the funnel. The result was that our loadings again began to grow—as much as 70 20 tons per hour.

I was bent however, on improving this I proposed to drive for 100 tons an hour Doubting Thomases din on helieve that this was possible But I was convinced that it was "All that had to be done was to speed up the convejor belt, instal a more powerful motor and enlarge in looking, funnel so that it would be possible to shovel coal into it from three soles instead of one

The day after this innovation was introduced the loadings jumped up to 120 time per hour, and in the presence of a special commission sent to test my innovation the result shown was 147 tons. Small cralt which usually took 40 50 tons of toal were now loaded within half an hour.

I then began to test my innovation with sand loadings. Success was assured from the very outset Loading jumped up to 290 tons per hour

Our earnings also should a considerable increase Although we were making record loadings we were not in the least tired and would go home from work haves and jolly

5 The press began to take an interest in our work. At the first items began to appear in the paper published by the port authornies. Then atteles begin to be published in the Kiev papers and finally in the new-papers of the capital. In the Soviet Union invention like mine, or for that matter any scheme for rationalizing industry, serving to make it more productive, are not the private trade secret of any individual or enterprise. They are immediately made public and introduced all over the country. The Stakhanioutes of the Disepropetrovsk port asked us to give them the details about our immovations. A brigade of Kieve stevedores in mediately left for Disepropetrovsk to demonstrate our methods to the local stevedores. After this the Kieve stevedores chall lenged the Disepropetrovsk mue to a Socialist competition

We were bent on showing record results. We fixed up two additional conveyors of the Samarets" type and linked them up with the main line. This enabled us to feed the main conveyor right from the coal dumps. The loadings jumned to the record figure of 214 tons per hour.

At a rally of intentors which was held in Moscov in the winter of 1936 I undertook to increase the productivit of inv consector to 300 tons per hour. The actual results, however, during the 1937 navigation season were far beyond my fondest hopes. Our loadings rove to 302 tons per hour.

In the autumn of 1937 together with a group of Kev steedores. I was sent to study at the Lenungrad Water Transport Academy. The daytime I devoted to study, but at night I worked out the details of a plan for bringing loadings up to 500 tons per hour.

In the spring of 1938 I was in Disciproperiors. Lacpear's record established by my brigade bad already been topped by another brigade—their loadings being '92' con-I decided to give a hand to the brigade that was lagging most behind. In z short while this brigade, which had always shown the poorest results was loading 435 tons, beating the records set by the best brigades. A few days later my plan of 500 tons per hour became a reality—in one hour my brigade loaded 504 tons of coal

The very next day another bregade also topped the 500 mark, loading 500 tons of saft. But soon this high level was left behind. My brigade began loading 630 tons per hour-other words we were fulfifling 20 normal loading quota-conveyor was moving at the rate of 11 s feet per second-

Other brigades were also showing good results

By the end of 1938 even this high level had been surpassed. Our loadings were new 1,059 tons of coal an hour-

Every port, every whatf has its own Stakhanovites itown inventors, its own rationalizers. The names of Petrast
and Henkin, Stakhanovite stevedore men from the port of
Odessa, are familiar all over the Soviet Luion. At the present
moment Petrash has been promoted to superintendent of one
of the largest ports in the country—the port of Baku. Henkin,
who is a foreman stevedore was elected a member of the
Storeme Soviet of the U.S.S.R.

Captain Tchadayev, master of the Stephen Idam, was the first to begin towing larger caravans of barges. His vessel legan towing barges loaded with 40,000 tons of oil Captain Kalmiskov increased the number of barges attached to this tig boat to 22 units. In every basin of the Soviet Union people began to emufate the example set by Captains Tchadayev and Kalmiskov. They are raising the productivit of labour to unprecedented heights, showing real feats of labour heroism. Many of them have been awarded the highest distinctions in the Soviet Union for their outstanding weth-

6 Women too hold an honourable place in the water transport system. Ann Schetma captain of an ocean going. vessel, Olga Dobychina pilot, are but two in a whole list of names known all over the country

The progress made by the water transport system is accompanied by an improvement in the well being of the water transport workers. This applies not only to wages but also to the cultural level of the transport workers. The following figures give an idea of how average wages have increased.

# Average Annual Wages of Water Transport Workers

	1932	1937
River going vessels cren	1,332	3,161
Logshoremen		3,763
Sea going vessels crew	2,341	5,678
Logshoremen	1,739	3 931

Two thirds of all the workers in the ship building and repairing yards are on a seen hour shift. The rest are on an eight hour shift, with the exception of stokers boiletimen and all categories of hazardous trades, who are on a six hour shift.

Clubs, libraries, theatres moving picture theatres, stadiums sports grounds and yacht clubs are at the disposal of the transport workers and their families. The Water Transport Workers' Union has splendid rest homes and sama toria in some of the most heautiful spots in the Crimea and the Caucasus. These annually accommodate some 50 000 people.

Before the Resolution the water transport system could boast of only 12 second rate hospitals. By the middle of 1937 127 hospitals, 270 climes and dispensaries, 268 first and stations (located directly in the pards, wharves, etc.), 247. feld-her stations, 42 health centres for children were at the service of the water tran port workers. While the adults are busy at work loading, maining building or repaining vessels their children are looked after in 100 kindergartens. The best of everything is ensured to the children, who are under the constant observation of trained nurses and doctors and experienced pedagogues. In the spacious rooms and playgrounds of these kindergartens the children find interest a pastimes in collective games, music singing and drawing. In the summer time the kindergartens leave for the country, side

Under the Third Ine-Year Plan (1933 12) the water transport system was to play a still more important role in the economic life of the Soviet Union. The flicet of river and sea vessels was being considerably improved from the technical standgoint and was being supplemented by new nd still better vessels. The plan provided for the construction of new ship building yards. The freight turnover of river transport was planned at 36 600 000,000 ton miles for 1942 and that of sea transport at 32,000 000,000 ton miles.

New water arteries will increase the length of the inland waterways from 63,342 miles (the total length at the beginning of 1938) to 76.015 miles

Of the Volga projects the Uglaid development and Bylamsk development have begins to function and the part 1912 would see the completion of the Rybinsk and Uglach reservoirs. This would increase the depth of the river between Rybinsk and Itankova from 1 feet to 165 feet. At Kulhyshev work is under way on the largest hydraulic engineering scheme in the world—two hydro electric power plants of an agajegate capacity of 3,400 000 kilowatis. The dams here would raise the level of the river for a stretch of 1.212 ruiles and the

would allow the passage of ocean going vessels, provide cheap power to factories and works along the Volga, the South Urals and Moscow, he-ides urrigating 7,110,000 acres of axid land

The general plan for the reconstruction of the water arteries of the USSR provides for the construction of eight hydraulin engineering development schemes on the Volga River alone A canal at Stalmgrad will link up the Volga and the Don rivers. This will give the Volga an outlet to the open sea, connecting it with the Sea of Azov and the Black Sea.

The Soviet merchant marine furnished with new, first classification seeds, will ensure still cheaper and quicker chipment of raw materials for the needs of industry, agricultural produce manufactured goods and consumers' goods produced by Soviet works and mills, along the waterways of the ISSN

#### THE MOSCOW-VOLGA CANAL

## A KOMAROVSKY

1 200 years' History 2 Earth dams. 3 Built in 56 months, 4. Books natural 5. Architectural work. 6 Water for Vioscow

On the bank of what once was a small stream called Khimki, just a few miles outside Voscow, towers a magnificent structure built of graune and marble. From a distance it looks like a giant double decker ocean liner with a structure reminiscent of a captain's bridge in the middle. A five pointed gold star glistens at the top of its tall spire of stanless steet, riving 262 feet above the ground. The mane entrance to the building is decorated with porcelain discs bearing sculptured representations of the Kreinlin the Palace of Soviets, the Lenin Vasisoleum, the Theater of the Red Army and the Diseper Hydro electric Station. The porcelain discs on the land side depict a number of famous ships such as the cebreaker Krasson, the Soviet crusser Aurora, Columbus' Caravel, etc.

A broad grante staucase leads down to a concrete pier. The waves of the newly created wide Khimki Lake lap the stone moorangs.

This building is known as Voscow's Northern Rivert Port. Its facade ought to bear the inscription

> " Moscow's Port of three Seas The White, Baltic and Caspian'

 The history of the canal which links the Moscow River with the Upper Volga dates hack two hundred years

In the 1720's Emperor Peter I commissioned engineer William Henning to design the plans for a canal between the Volga and the Moscow River. The plan called for the building of 100 locks with a water level of not more than 6.5 feet each. The canal was to be navigable for vessels with a deadweight of about 50 tons. A trip along the projected canal was to take at least three days.

I airly detailed plans were drawn up. But the task of culting that kind of canal seemed too complicated and un realisable in those times. The project was pigeon holed and the question of the canal was not broached again for another hundred vers.

The idea of building a Moscon Volga canal was resuest attain the 19th centure during the reign of Micholas I in connection with the decision to recet the Cathedral of Christ the Saxiour in Moscow. At that time the building of a cathedral of the size planned seemed to be a coloseal under taking and the transportation of the necessary building material pre-cuted a practically insuperable problem. After interminable meetings of commuttees and sub-commuttees at was decided to dig a canal between Moscow and the Volga for the sole purpose of transporting limit-stone and granue from the upper reaches of the Volga to the construction site of the cathedral.

A project was drawn up for a caual between the Sastra River, a tributary of the Dubna which flows into the Volga, and the latra River, a tributary of the Mose in River

Work on this canal went on for 19 years. In the mean tine the building of a railway between No cow and St. Peters burg (now Lenngrad) was begun, and economists pointed out that the clients who were expected to use the artificial waterway would prefer to send their shipments by the new railway. The work on the canal was accordingly discontinued and all its structure finished and unfinished, were sold at public auction. The idea of the canal was again consigned to oblivation for another century.

It was only in recent years in the Socialist state of notices id peasants, that the idea of linking the Volga with the Moscow River was realised on the initiative of Joseph Stalin

The realisation of this idea faced the engineers with a difficult problem. The Volga whose waters had to be made to flow into the Moscow River was separated from the fatter by 80 miles of fields marshes and hills. The task was to create a navigable waterway across the high divide between the how tiers.

The Soviet engineers in charge of the project displayed great ingenuity in solving this problem

2 They built a number of large earth dams and created a chain of artificial lakes joined with each other by means of canals and a system of locks rising in the form of "water stairwas" from each side of the new water way—from the Volca and from the Moscow Riser

In order to provide an uninterrupted supply of water for the waterway a large storage lake, known as the "Sca of Moscow," was created at the Volga terminus of the canal This lake holds 39,547,200,000 cubic feet of water and regularly discharges 3530 cubic feet of water per second while is conveyed by the canal to Moscow. Two hundred major engineering structures have been erected along the route of the canal, including 11 reinforced concrete and 11 earth

dams, 7 railroad and 12 highway bridges, 5 pumping stations, 8 hydro electric stations with an annual output of 150,000 000 k w h, and the Stalin waterworks

In order to make the naters of the Volga flow into the Moscow River, it was necessary to exacavate approximately 262 000,000 cu yards of earth and pour about 7,000,000 tans of concrete. The building of the canal required 850,000 into so f cenent, 9,156 000 cu yards of stone and gravel and 110,000,000 bricks.

3 The tremendous job was performed in record time the entire construction took 4 years and 8 months Time could be accomplished only by baving the work mechanized. The numerous machines which were used in the construction of the canal were all produced in Soviet factories.

The special railroads, which served the construction site, were provided with 160 locomotives, 225 motor railcars and 2.100 flat cars

The builders of the canal further had at their disposal 275 tractors and 3,050 trucks 190 hydraulic guants and 170 steam shorels norbing in the occavations and quarties.

Telephone and telegraph wires of a total length of 2,740 mles stretched like a deose cobveb overhead along the entire route of the futur canal. The construction was provided with 3 200 telephones and 22 telegraph stations

The Moscow Volga Canal was finished in the summer of 1937, on the day fixed for its completion

On May 2, 1937, a flotilla of large motorships and cutters, the first to pass through the Canal, cast anchor opposite the walls of the ancient Kremlin In the navigation season, ships running exactly on standle leave the pier at Moscow's Northern Port on Lake Khimki and proceed northward. The ships follow the canal, rising to the watershed and then descending again.

Small rivers flowed here but a few years ago. Now these rivers no longer exist. Huge earth dams were built across the channels of the streams. The latter flooded their natural valleys and formed artificial lakes covering a total area of over 23 square miles. Sections of the canal connect the separate storage lakes, and the vessel pursuing its course over the new waterway passes through the connecting canals, with their geometrically precise stone banks, from lake to lake each abounding in small green jetts and bays.

The Moscow Volgo Canal is 79.5 miles long. It is 1d feet deep, which is an unusual depth for river canals. Its width—2004 feet—is sufficient to allow the simultaneous two way passage of the largest river vessels. Big three decker passenger ships and heavy metal barges with a deadwaight of 18,000 tons can sail on the canal.

4 Looking at the green meadows, woods and pastures on the shores of the authenia lakes and observing the flocks of ducks rising noisely from under the very nose of the shapor the grey gulls circling and screening overhead, one might think that these lakes, busy and creeks have been created by nature and have existed here since time immemorial. Only the stone banks of the canal and the arched bridges spanning it bear witness to the fact that this waterway is the hands work of man.

One of the artificial lakes is the Ucha Reservoir Its south eastern section is protected on three sides by earth dams. The reservoir holds 7,944,750,000 cu feet of water. Here the silt and mud settles and the clear water then flows south

through a special reinforced concrete channel about 17 miles fong to the Stafin Water Works where it is further purified before it passes into the pipes of Moscow's water distribution system.

The last lake in the series of steps by which the caual rises to the crest of the watershed is bounded by an earth dim. Next to the dam rise the austere and magnificent white stone towers of Lock No. 6.

After passing through the gates of this lock the northbound vessel begins its descent of 125 feet down the steps of the northern slopes of the canal leading to the "Sea of Moscow" on the Volgo. The descent is down a flight of five steps, each of a height of from 196 to 262 feet. The length of each of these steps, while varying, is measured in terms of miles

- 5 The architecture of the structures along the route of the canal is also worth noting. Until recently very hitle attention was paid to the architectural aspect of hydro technical works. Hydraulic engineers maintained that a lock, for in stance, was primarily an engineering structure and its appearance was entirely subordinated to technical regular ments. In their opinion every attempt at architectural design may would only tend to obscure the clear and precise purposes of the various structures. They cated the examples of the Suez, Panama and kiel Canals, where all the structures are devoid of any architectural embelthsheme.
- The builders of the Moscow Volga Canal were of different opmon They held the was that each lock must have its own architecture, and that all the structures of the finished canal must be so architecturally designed as to serve as a fitting monument that would tell future generations of the

heroic work of the tens of thousands of workers engaged in its construction

The Soviet architects attained splendid results in coping with the difficult problem. The lofty towers rising above-Lock No. 6 are an example in point

The lock itself is an numerise ferro contrete chimber 950 feet long and 984 feet wide. It lowers the vessel 262 feet down the first step of the northern descent. At each of the five steps of the descent the lock is rounded by an auxiliary canal with a Dumping station in the centre.

The pumping station at Lock No 6 is a magnificent tall building faced with natural stone of a light hue. Inside, it is equipped with four propeller pumps which have no equals anywhere in the world.

Each pump weighs 85 tons. The diameter of its turning, wheel is 62 feet. The capacity of its motor is equal to that of the engine of a passenger locomotive. The pipe by which the water is brought to the pump is 50 wide that a heavy truel-could pass through it easily. Each pump raises 5,000 gallons of water ner second to a heacht of 562 feet.

As the ship proceeds northward it passes through other locks
Around each lock one sees flowers, young trees, signal lights
Only the lock towers in each case are of a different shape, of a different appearance and different colour

At least, having descended all the steps of the northerm speech, the ship enters the "Sea of Moscow". The contour's of the shores are voled in a musty have. One catches the sound of a distant ships siren. It is echoed by the sirens of other ships. From the Sea of Moscow vessels sail in different directions. Some proceed west to Kalimin. Others take

the course southward—to the Canal and then on to the Moscon River, Oka, Volga and Caspian Sea Boats sail from heir castward to proceed along the old channel of the Volga to the Mariinsk system leading to Lake Ooega and further west to Leningrad and the Baltic or north to the White Sea along the Stalin White Sea Baltic Canal

This last route—from the Sea of Moscow to the old channel of the Volga Canal be clearly seen from the ship There is a broad canal leading east from the lake In the distance rise the white stone towers of a lock which affords passage to the ships proceeding from the Sea of Moscow' down to the Volga

To the right may be seen the earth dam blocking the old channels of the Volgs Act to it is the concrete building of the brankon hydro electric stations with 30000 kilowatt capacity. (A similar hydro electric statian stands at the beginning of the steps of the southern descent from the divide to the blocking River?)

Immediately behind the Nankovo hydro electric station rises the wall of a concrete dam across the Volga raising the level of the riser 59 feet. A guant crain moves back and forth on top of the dam, raising and lowering the powerful metal shields which block the eastward course of the Volga.

An earth levee extending for 5.5 miles from the concrete dam bounds the Sea of Moscow" in the east

And rising above the dams, locks, the hydro-electric station the expanses of the Sea of Vovcov and the vessels plying its waters there stand at the entrance to the Canal two colosed monuments—the statues of Lenin and Stalin hewn in grey grante. A few years ago the Volga flowed here Each spring it rose in angry floods mandating the adjoining meadown. Each summer its level dropped, and shoals and sandhanks appeared on the surface. In the hot summer months even small vessels with a low draft could not sail in the upper reaches of the Volga.

This place has now been turned into the 'Sea of , Moscow'—a broad lake covering an area of 126 sq mks. It is here that the pumping stations obtain the water for the new waterway. It is from here that water is conveyed to the water mains of the capital.

Vessels ply the waters of the wide lake, signalling each other with their sirens. The distant shores echo the signals. In the night the route across the lake is indicated by automatic signal lights.

The ship proceeds westward. There is not a single sheal or sandbank on the way. A broad expanse of water cover the former meadows and brishwood. The haves of the new lake swell over the site where some villages and the small town of Korchev stood only a few vears ago—the villages and the town have been moved to new place.

After having traversed a distance of 744 miles from the Volga Dam, the ship is moored at the new anow white landing pier of the port of Kalinun

This terminates the trip

6 With the cutting of the cutal the waters of the Volga have begun to flow to Moscow The capital is now fully provided with drinking water

The waters of the Volga have replemened the Moscow River As a result the water level of the old Moscow River at the Kremlin has risen almost ten feet

The canaf has shortened the distance between Moscow and a number of other cities of the Sourei Union. Thus the distance to Gorky has been reduced by 63 miles. The distance from Moscow to Lenngrad by water has been shortened by 655 miles.

At the unitative of the great Stalin, the city of Moscow which was formerly far removed from "big water', has thus been transformed into a port of three seas. The White Sea, the Baltic, and the Caspinan Sea.

PART III SOVIET AGRICULTURE

# GREAT CONTRIBUTION OF SCIENCE TOWARDS AGRICULTURE

#### BY

#### N TSITSIA

Hybrid seedings. 2. Outstanding scientist. 3 Perchanal wheat. 4 Hot house farming. 5 Emigration of crops to the North. 6 Summer potators. 7 Combating pests and disease. 8 Pertilizers. 9 New implements to Livettock. 11 Motement of innovators.

Two conceptions more remotely related than peasant farming and agricultural science could hardly time ben found in old Russia.

The peasants jogged along as best they could without the aid of science or any prospect of receiving it

Only after the establishment of Soviet Government did agriculture develop into a concerted effort for high crop yields, with the state directing and supporting it as a prime data.

In a comparatively short time all conditions have been created in the Soviet Union for the unrestricted development of agricultural research on a scientific basi-

There are now over 14,000 scientists at work in agricultural research In the Soviet Union there are 90 agricultural re-certal institutes 367 experimental stations, and 507 experimental farms with numerous branches whereas in Tsarist Russia institutions of the kind could have been counted out one is fineer But that is not all. Bearing notable writies to the tremendous intere t of the Soviet peasantry in scientific a<sub>c</sub>r culture there are shout 20 000 with late the same thought and the state of the soviet peasantry in scientific a<sub>c</sub>r culture there are shout 20 000 with late filtered taborators, function a<sub>c</sub> on the collective farms (kolkhozes). It is not difficult to imagine, on what fettile soil falls every scientific discovers and innovation.

In 1930 seventy per cent of the area under gram in the collective farms and State farms was sown with high grade seeds.

The State has organized 1547 experimental farms for the testing of cereal seeds in all parts of the country. Further more 693 agrochemical laboratories have been organized by the machine and tractor stations.

southern districts, held dominion over 2,470 acres in this farm

Rapid developments are being made in the theory of

controlling vegetable life to reform inherited characteristics for the benefit of agriculture

The late I V Mechurin, a member of the Aeademy of Sciences, working in the same field as Luther Burbank, proved under suitable conditions young hybrid seedings can be I to develop any desired characteristics

Michurin took hardy wild plants from Siberia, Canada f and various mountain regions and crossed them with deliciate southern plants. The cross breeds so obtained inherited all the hardthood of the wild flora resistance to frost and drought and minimity to disease. On the other hand they resembled their delicate parents of the south in tastiness, hightness of colour largeness of fruit and other desirable characteristics.

In this way Michurin hred a large number of remarkable varieties of fruit, among which we might mention the Belfieur Kitaika apple, the Krasa Severa cherry and the Michurin Beurre

As a result of a number of interesting and original experiments he also succeeded in hybridizing the cherry and bird cherry, the peach and the almond, the apricot and the plum, and many other fruits

Altogether Micharm evolved 300 valuable varieties of front.

Michurin's work has found many followers. Michurin orchards and Michurin clubs have sprung up in all parts of the country

Year by year grapes and peaches, pears and lemons continue their triumphal advance to the north spreading over

to new territories In the USSR alone about 10 900 000 Michigan trees have borne fruit by 1940 The fruit gardens of the USSR covering an area of 3 211 000 acres produce more than twice as much as during Tsanist regime

Apart from State owned orchards there are large kolkhoz orchards supplying the market. The district of Genichesk Zaporozhye Region where in 1917 there were neither orchards nor vineyards now has 1,069 acres of orchards and about 1,000 acres of vineyards.

Micharin 8 labours have introduced important new factors in the development of citrus plants and other sub tropical crops. Now in the coastal regions of the West Caucasus new plantations of oranges lemons, tangerines and tea are being developed year by year. Suany Georgia is becoming the sumbles of citrus fruits for the whole country.

In 1938 over 2:00,000 000 of the oranges and femons placed on the market were grown on State farms and collective farms. In 1940 the Georgian Republic had 50 000 acres under citrus fruits.

2 Trofim Lysnko member of the \tademy of Sciences is another outstanding scientist whose work has greatly assisted the development of Soviet agriculture. He is the author of the theory that the development of annual plains proceed by stages. The first and second of the stages he found to consist in reaction to temperature and light respectively, and upon these he concentrated.

From these studies Lysendo evolved a new process in scientific farming scientification, that is subjecting the seeds to indoor temperature before planting. The experience of lens of thousands of farms has shown that as a result of vernalization the seeds sprout two or three days carlier, while the yield increases by an average of 90 100 lbs per acre The vernalization of grain crops is practised on a wide scale in the USSR In 1938 the area under vernalized grain reached 21 700 000 acres and in 1939 about 35 748 000 acres

The vernalization of sugar beet potatoes cotton and other crops is also widely practised in the USSR

Lysenko has also devised new methods of selection. Using methods he has produced in the space of two and a half excellent varieties of spring wheat in the Odessa Region h his colleagues. Lysenko has devised a method of im

proving the seeds of self-lertilizing plants by interbreeding and nursing them on seed plots

The farms using these improved ecids gain an extra yield of 131 to 178 pounds per acre

3 The writer humself is working on cross breeding cultivated plants with extraneous wild grasses. We have made many successful experiments in crossing wheat with couch grass, and have discovered the varieties of this very common weed and cross with wheat. In 1930 I produced the first hybrids of wheat and couch grass. This led to the novel hypothesis that a new variety of plant, non-existent in nature, might be obtained—perennial wheat. In 1934 the first families of perconnal hybrid wheat, Nos. 3406.5 and 23086 were selected. They proved my theory.

These perennial wheats have the unusual power of growing again after reaping. It has be n demonstrated under experimental conditions with three years' continuous vegetation, that these hybrids yield seven or eight harvests from a single sowing.

At the present time perennial wheat 15 being tested by our farmers. Even under the unfavourable climatic conditions of 1938 in the Moscow Region perennial wheat yielded as much as 19 cwts, per acre Perennial wheat also has exceptional drought resisting properties

In addition to these percuirals, acutal forms of the same hybrid have been evolved with numerous valuable properties and characteristics of their own

At an experimental station in Voroshilovsk (North Caucasus) the agronomist Derzhavin is working on important experiments towards hybridzing a variety of hard wheat with percental rive. He too has evolved a triennial wheat

My theory that every agricultural plant can be matched with a wild one has become a principle guiding many rescuch workers.

The results of these studies in wheat breeding, so wide and diversified, have already been put to practical use in 'oviet agriculture

Wheat, like Undurin fruits, is being grown further and lurther north and spreading over wider areas every year

In the old days the central regions of Russia proper frew nothing but 154. Wheat bread was a rare delicacy on the table of the Russian peasant, and was regarded as a sign of prospection.

At the present tion wheat is being sown in a large number of new regions. Even where the climate is severe for wheat, there are no praisints who go without white bread.

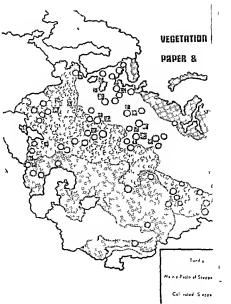
The conquect of the Arctic, the discovery of new deposits of coal, apatite, iron and other economic materials in the lar north of the country have fed to the population of uninhabited distincts and created a demand for local farm produce In this direction useful work is being done by the Arctic experimental station of the All Union Institute of Plant Growing, directed by Academican Eichfeld. This polar station has evolved new kinds of barley, oats, vegetables, foducer grasses, potatoes and other edible roots suitable for cultivation in the far north.

In the Republic of Yakutia, with its perpetually frozen and brief dry summer the kolkhoz farms, by employing need agrotechmeal methods and cultivating the soil with tors are getting harvests regularly. For instance, the Orjomkidze Kolkhoz in a district where the annual meen is 9 des C grows 22 tons of cabbase to the acre.

4 Before the October Revolution there was no hothouse forming in the Far North Now there are 73,000 hotheds and 451 220 sq fect of greenhouses On the shore of the Kola Strait near Latitude 70 dgs N, the collective fishers with Tarmo and Tasto obtain over 30 tions of potatoes and sixteen tons of other edible roots to the acre In 1938 the 'Industria State Farms in the Murmansk Region hervested 12,792 cwt of vegetables about 28,000 ewt of potatoes, thousands of centrers of chible roots and tens of thousands of centrers of chible roots and tens of thousands of centrers of hay Apart from sowing in the open field this State farm also has a large area under glass which in 1938 vicled 436 flows of veretables

The growing of greens in the open air has now become practicable right up to the shores of the Kara Sea and the Siberian coast of the Arche open.

Soviet agricultural science has been highly successful in naturalizing crops in new localities. The Kuban is now grow ang rice, while the North Caucasus and the Ukranie are growing cotton.



New sugar beet districts have been developed on the kuban, in the Saratov Region, the Altan territory, and other parts of the country B 1937 the area under cotton in the USSR had teached 701,100 acres, and in the Ukrainian SSR 533.20 acres

5 The great emigration of crops to the north of the country was undreamed of by agronomists in the old days. It has become possible due largely to the fruitful labours of Soviet screnivts in genetics selection and seed farming. The USSR has the most norther cotton plantations in the world, extending to US des. N

In Azerbaijan (Caucasus) and Turkmenia (Central Asia)
nus varieties of Egyptian cotton have been produced and are
ulread) being cultivated in the collective (arms and State
farms. These varieties are extremely fertile and ripen early

In 1930 the plantations of Egyptian cotton in the USSR covered a total area of only 11,830 acres In 1938 Egyptian cetton was being grown over an area of 339,743 acres

Highly fertile varieties of American cotton with a long fibre, have been evolved by selection and are becoming wide spread

The Odessa Institute of Selection and Genetics (directed by Vademician Lysenko) has bred two new fertile and early ripe varieties of cotton (OD 1 OD 2) growing a long fibre in 1933, 50 000 acres of fand were planted with these varieties.

A number of successful experiments have produced several new varieties of sugar beet with a high sugar content and other valuable properties

6. Soviet selection experts have also evolved highly fertile varieties of potato. For the first time in the history of the

11

science of selection, the Potato Institute has produced a variety (No. 2670) that resists parasites (Phytophthora). With the help of the collective farms this institute in form years obtained 11,500 tons of potato from 20 beds planted with "\$670".

Lysenko has also elaborated a method of planting potaions aummer which has revolutionized the development of this culture in the stoppes of the USSR. Formerly planting stock in the south had to be completely renewed every two or three years with seed potatoes from districts further north. This was regarded as the only method of preventing potatoes from running to seed in southern districts, like the Crimer, where the errop searcely recompensed the farmer for what he had sown. Summer planting put an end to this. The collective farms and State farms in the south now obtain good crops regularly every year. For instance, the "Chervonny Kazal," Kolkhoz in the Jankon District of the Crimea increased the yield to ten and a half tons per acte by using Lysenko's

7 Great progress has been made by Soviet scientists in the protection of plants against pests and blights

Especially wide use is made of oophagous trichogrummuse to combat destructive moths and grubs. Hundreds of special laboratories for the breeding of trichogramminae have already been organized on kolkhoz farms.

One of these laboratories, directed by collective farmers Moskalenko of the "Shivaki Lenna" Kolkhor, Yampol District, Vinnitas Region, (Krame, bred 37,000,000 of these insects, which afterwards rid an area of 914 acres of destructive moths

Soviet research laboratories have discovered a number of viruses for use in combating various agricultural peets and diseases.

- 3 Great progress has also been made in the field of agro chemistry Academician Pryanishnikov has discovered the principle of using ammonia salts as fertilizer
- In recent years leading collective farmers, State farm employees and managers of kolkhoz laboratories have been experimenting with the "deeting" method, that is, dosing crops with fertilizer at various stages during the vegetation period. At the present time this method is being used on huse areas, particularly those under industrial cross.

In Tsarist Russia the outlay of potassium fertilizer was something less than a teaspoonful to the acre

In the USSR mineral and natural fertilizers are used in vast quantities In 1937 minety per cent of the beet fields and cotton plantations were enriched with mineral fertilizer. At the same time there is a constant increase in the general distribution of manure.

In 1937 the chemical industries of the USSR supplied the countryside with 2,798,000 tons of mineral fertilizer, as against 230,000 tons in 1913

Among the great achievements of Soviet agricultural science we must also count the introduction of bacterial fertilizer—intragin—for various bean cultures, and the invention of a bacterial fertilizer—"Azotogon"—for creats, industrial crops and vegetables. Experiments have shown that this fertilizer increases harvests by as much as 20 and 30 per cent

9 The Tractor Institute and a number of tractor plants have designed and built tractors powered with Diesel engines and gas producers, which, as tests have shown, run at a low cost and give long service without repairs The Institute of Scientific Sowing has designed machines for sowing in close drills. When sown in the usual way plants often grow in adverse conditions are ill nourished, stiffed by their neighbours and stunted in development. The new sectiers will make it possible to distribute the plants more rationally, so as to guarantee, as far as possible, a place in the sum for all. New types of seeders have been invented for cain crops sugar heet and other industrial crops. In 1939, 717,000 great were some with these close send drills.

Under the First Five Year Plan much was done in theory and practice to improve grain hair-ester combines. Special attachments were derived for collecting sunflowers, castor oil plants millet and other crops

So set inventors have devised a special harvester combine for collecting grain crops in the humid conditions of the northern districts. Hundreds of these special 'northern combines were employed during the harvest last autumn Soviet engineers have also designed machines for the planting, cultivating and picking of potatoes sugar beet, flax cotton, and other crops laborious to farm

10 No less progress has been made by Soviet scientists in the field of livestock breeding. I might mention the wolk of Academician know who is breeding valuable hybrids, notably the Askana Rambouillet and a new breed of pig—th-Ukraniana Whit.

The All Union Institute of Animal breeding has developed a method and technique of inseminating animals artificially, so as to make the maximum use of valuable males

In 1938, 1,536 cows were inseminated from one bull and produced 1,490 calves, 15 016 sgeeo were inseminated from one ram and produced 15 662 lambs By 1938 fifty million farm animals had been inseminated artificially in the Soviet Union

11 Whatever branch of agriculture we take we find thousands upon thousands of collective farm experimenters working shoulder to shoulder with scientists in search of new includes, new discoveries

This movement of innovators, boldly and rationally transforming nature, is becoming a real mass movement, a movement of the people. This was seen from the fact that at the All Union Agricultural Exhibition of 1939, which exhibited only the best of the best, 160,000 to 200,000 collective farms, State farms, machine and tractor stations, collective farms, brigades and teams were represented—real cultiusiasts and Iront liners of Socialists accurations.

This close contact between Soviet science and the people allows our men of science to go boldly shead with their experiments, enriching the collective farms and State farms with a wealth of modern scientific discovery.

Much has been and in being contributed to science by the practical experience of the collective farmers. Soviet academicians and professors, all our leading scientists, make these contributions the basis of their work in the service of Soviet science and the Socialist farms of the USSR—the country of large scale agrandulure immatched in the world.

Ivan Micharm olten said "We can expect no javours from Nature, our job is to take them"

In the USSR thousands of people are taking part in 

whise great duel with Nature, in a true spirit of innovation, 
entibusasin, pertunative and research. That is why the re 
organization and renewal of the countryside in the Soviet 
Umon has in the space of twenty one years, produced such 
astonishing results.

#### THE STATE FARMS

## BY P LOBANOV

- z Agraculture 2 Socialist farms 3 Livestock-
- 4 Experts employed 5. Wage increase. 6 Eight hour day 7 Good harvest.

Old Russia was primarily a country of small scale peasant agreculture. The great mass of the peasants held tiny plots of land while hundreds of millions of aeres of the best land belonged to the royal family the church, the nobility, and the kuliaks, who exploted the poverty of the peasants to cultivate their estates. The only agricultural implements available to the peasants were primitive wooden ploughs and harrow that did little more than scratch the soil. Peasant farming before the Revolution was a constant struggle for magre harvest under the threat of drought and farme.

1 Agriculture in the Soviet Union presents a totally different picture. The peasants have pooled their resources in large scale collective farms the Folkhozer. Moreover, 6330 machine and tractor stations have been opened—State enter prizes through which the Soviet Government renders the collective farmers scientific and technical assistance. In 1933 there were 433,500 tractors at work in the fields of the Soviet Lono, 153,500 harvester combines and hundreds of thousands.

of other complex agricultural machines. In addition to the collective farms which are eo operative before of peasants working and owning the implements in common there are large scale. State agricultural enterprises. State farms which are run on industrial lines.

The first farms were organized by the Soviet Govern met in 1918 but their rapid development began in 1928 29 when on the nuitative of Stalin large State grain farms using modern methods were organized all over the country. By the spring of 1930 143 State grain farms had been organized After them came large scale stock raising farms.

There are State farms in all parts of the vast Sovict Umon in the steppes of North Caucasus the Crimea the steppes of Orenburg the Trans Volga districts and the spread ing plains of Karakhstan and Siberna

2 The history of the State farms is one of the chapters in the great campaign for the reorganization of agriculture the development of large scale Socialist farms. As a result of this struggle the Soviet Government broke the resistance of the enemies of the Soviet people who tried to frustrate the development of State farms by sabotage.

Hundreds of large State grain farms and stockraising farms are now thriving in all parts of the Sowiet Union and lave become an abundant source of grain meat milk and other supplies

Already in 1930 the State grain farms supplied the country with 553 650 tons of grain In 1933 37 the State grain farms and stock raising farms controlled by the People's Commissariat of State Farms supplied the country with

9,136,600 tons of gram, 1,120,400 tons of meat, 4,095,000 tons of milk and 65,500 tons of wool.

J. In order to put an end to kulak exploitation and the peasants from lunger and poverty it was necessary to show them in practice all the benefits and the advantages of large scale, mechanized Socialist agriculture. The State farms, equipped with up to date machinery and rationalized with the latest methods of agronomy and scientific animal husbandry, showed the peasants the advantages of large scale Socialist agreeulture. Thereby they played a great part in collectivization, the reorganization of peasant farming on modern lines.

By January 1, 1939, the number of state farms in the USSR had reached 3,957 They now ocupy an immense area of 163,000 000 acres

The majority of the state farm have been organized on land where Tsarist Russia, with its backward agriculture, could make nothing grow. In other words, tens of millions of acces of land previously uncultivated, have been brought under the plough. There are State larms in all the repulse and regions of the USSR, even in localities where 'he population had previously been non agricultural

Besides producing foodstuffs for the urban industrial centers—grain, meat, milk, butter, fruit and vegetables—the State farms supply raw material for our industries—cotion, flax, work, sugar beet, recetable and essential oils, etc.

There are also special State farms for breeding reinders and various animals valuable for their fur, such as sables, martens, raccoons, and silver forces. The State larms as in 1938 can be classified as follows

THE OTHER JULIANA GO IN	1700 cm.r	oc couperjie	/
Type			No of farm-
Grain growing			477
Cattle breeding			771
Pig breeding			629
Sheep raising			200
Growing cotton and other fiber crops			54
Growing special cre	ops (fea, t	abacco,	
etc)			114
Fruit, vegetable o	ind time a	growing	645
Studs	•		118
Reindeer breeding			31
Poultry raising			102
Suburban (chiefly	for te	getables	
and dairy prod	uce, and	nuscel	

The scope of State farming may be seen from the fact that the total sown area of the State farms in 1938 was 30,028,000 acres

Inneous

216

3 The total Investock of the State farms is 2,597,000 head of cattle 1,8 s0 000 head of hogs and 5,676,000 head of sheep

sheep
Under the first two Five Year Plans the State nive-ted

about 15,000,000 000 tubles in the development of state farms and their technical re-equipment. The State farms are powerfully equipped with machiners. The number of tractors, harvester combines, motor trucks

The number of tractors, harvester combines, motor trucks and various farm machines is growing from year to year The quality of these machines is constantly improving old types of machines are being replaced by modern and more powerful ones A good proportion of the tractors now in use on the State farms are of the large caterpillar

type, while Diesel tractors and gas generator tractors are being introduced on a wide scale, and, with them, the giant harvester combine

In the last ten years the number of tractors in the State farms has increased 12½ times, aggregating 1,751,800 horse power in the State farms there are 26,000 harvester combines and 20 600 motor tricks.

fn the State grain farms 945 per cent of all work is now being done by mechanical traction while the harvesting is done exclusively by combines

The wide use of machines on the State farms and collect une farms has introduced new occupations in the country side—tractor driving combine operating, mechanics, truck driving, which were unknown in the old Russian countryside. In order to satisfy this demand for skilled labour a great network of technical schools has been organized. Many of the schools are located directly on the State farms. Between 1931, and 1937 the State farms under the People's Commissariat of State Farms alone trained 200 000 tractor drivers, \$2,000 mechanics and 27,000 foreign for grain farms and stockfarms. The State farms run various schools and study courses to train skilled personnel not only for themselves, but for the kolkhoz farms too.

4. The State farms employ numbers of agrono musts, engineers, animal breeding experts, and veternary surgeons. These professions are taught in a large number of special agricultural institutes and colleges. Through the institutes and colleges under its jurisduction, the People's Commussariat of State Farms has during 1931:37 trained 2000 engineers, 2000 agronomists, 7,500 annial breeding experts, 3,500 veternary surgeons. Furthermore, large

numbers of agricultural experts for the State farms have been trained in other institutes of education

The leading workers in the State farms—the Stakhano vites—are making world records with their tractors, harvester combines and other machines

The tractor driver Belenko, of the "Bataski" State Farm (Rassov Regian), decorated by the Government for his distinguished services, ploughed 5,965 acres in one session, while the tractor driver Kostenko of the Kropotkin State Graun Fann, (Krannodar Territory) ploughed 6,538 acres

The tractor drivers Kopytko and Kovtun of the "Gigant" State Farm in North Caucasus, sowed 642 acres a day with 6 seeders hitched to a tractor of the caterpillar type

During the harvest season of 1938 Bankin, a combine operator of the Privolensk State Cattle Farm (Rostov Region) harvested 6,200 acres of grain with a tandem of two combines, while Galunchikov, a combine operator of the "Podovinnoye" State Farm (Chelyabnisk Region), harvested over 3,700 acres and threshed 3,500 tons of grain

Labour productivity is increasing in the State stock raising farms also

In 1933, for instance, Ulyana Barkova of the State dairy farm "Karavayevo" (Yaroslavl Region), got 88 tons of milk per cow Kuznetsova of the "Kurkino" State Dairy Farm (Vologda Region) has reared over 1,000 calves without losing a single one Every year, Lavrishko, the grazier of the Proletarsky Sheep Farm, North Caucasus, has 150 new lambs for every hundred enes

Modern machinery efficiently used has greatly increased the productivity of labour on the State farms and their output. son of a workingman His career can be stated briefly he worked in the engine room of a Volga steamer, then at a corn mill Later he became an artificer and gave up his trade to study at an agricultural institute. Eventually he became the technical director of the October State Farm (Voronezh Region) Now he directs a great stock farm

Many State farms are already models of good organizan and efficiency

7 One of the oldest and best known State farms, not only in the USSR, but also to people abroad, is the "Gigant" Grain Farm in the steppes of the North Caucasus. In the years 1937 and 1938 it has averaged about 0.8 tons of winter wheat per acre from an area of 39,500 acres. This farm also has \$,200 head of cattle, \$,400 sheep, 700 pigs, 260 horses. In two years it has produced 10,500,000 rubles worth of foodstuffs and made a profit of 2.785,000 rubles.

The "Kirov" State Grain Farin, situated in an arid zone of Kazakhstan which has a rainfall of only 220 mm. a year, now gets good harvests regularly In 1938 it averaged 08 tons of grain per agree from an area of 61,750 acres

In the "Karavayevo" State Dairy Farm the yield of milk in 1938 was 615 tons per cow from 251 cows. Almost half of the livestock are cow which have calved for the first and second time and give an unusually high yield of milk for their age. Since her second calving, for instance, the cow "Blagodat" has yielded 9 tons of milk.

The record making cow "Poslushnitsa" which was reared on the same farm yielded 163 tons of milk during her sixth location (1937 and the beginning of 1938). The Proletarsky Sheep Farm has 22,000 head of precore (early maturity) sheep In 1938, 122 lambs were obtained per hundred ewes, and in 1939, 147 winter (February) lambs per 100 ewes were obtained in six flocks. This State farm shears an average of 99 lbs of wool per year per sheep. All the ewes on this farm bave been subjected to artificial semination for some years past.

Another pedigree sheep farm, the 'Bolshevik' (Orjoni kidze Territory) has 34,000 sheep of the "Soviet Rambouillet" breed, a cross between the local menno and the American Rambouillet to Soviet Rambouillet combines the weight of the American Rambouillet with a heavy fleece. The best of them weigh 264 pounds and bigher and yield 35 pounds of wool at a shearing. The average fleece per sheep on this State farm sold 6000 pedigree breeders to the collective farms.

The Third Five Year Plan which started in 1938 could, till the outbreak of the present conflict in June 1941, contribute a great deal in making the State farms thriving concerns by continuing the mechanisation of agriculture and thus in creasing the productivity of the labour in these farms

### COLLECTIVE FARMS (KOLKHOZ)

#### BY F KLIMENKO

r During the Ts.-rist rule 2 Capitalist, driven out 3 Equality Commune 4 Work-day units. 5 Machine and tractor stations. 6 93 5 peasant house-holds united. 7 Mechanisation 8 Stock raising 9 Complete bar mons 10 Peasant woman

aneny to reason woman

1 In Tsarsst Russia the 22000 landlorda owned 167000000 acres of land and the 10000000 peasant house holds 197000000 acres of which the most fertile sections were owned mainly by the kulaks. Huge tracts of the best land were the property of the royal family and of the monateries. The landlords and kulaks who constituted aomewhat over 13 per cent of the population controlled 716 per cent of all the strain marketed.

The old villages were poverty stricken and squald 65 per cent of the peasant households were made up of poor peasants 30 per cent had no horses and 31 per cent no agricultural implements being obliged to hire them from the kulals if they wanted to cultivate their tray alloiments or the plots they managed to rent from the latter or from the landlords Most of the harvest went to pay for these services leaving a bare putance for the peasants family Fifteen per cent of the peasants and not have the wherewithal to sow any crops whatever. For many peasants a piece of unadulterated bread made of pure grain was a rare feast, since most of the year they are all sorts of substitutes.

Every year 2,000,000 poor peasants left their homes to work on the landed estates and kulak farms in the Kuban and the Ukraine

Yuzkur, the village where I was born, can serve as a vivid illustration of the backward and impoverished condition of the peasants before the Revolution, and the brutal exploi tation to which they were subjected

There were 3,000 households un our village. The best lands belonged to the landlords Virkentin and Fischer, and were worked by hands hired un our village and the nearby villages and by landless peasants from other parts of the country who were driven by poverty and hunger from place to place in search of work and bread. The peasant allotments in our village were only about five or six acres, and never more than eight.

The land was worked in an extremely primitive way a a piece of land was sown, the crop barvested and then was left to lie fallow while another plot would be cultivated Crop rotation and scientific farraing had never even been heard of No fertilizers were used on the land Sclected seed was quite out of the peasants reach. Only very few among the peasants owned metal ploughshares or reapers. Most of the Yurkui peasants used antiquated wooden ploughs and fialls. Nor did every peasant have a horse. Those few who could boast of one, for the most part possessed only some sorry old nag it is small wonder then that the grain yield on the peasants land was generally from 0.15 to 0.2 tons per acre, and decreased with every year.

Land hunger drove the peasants into kulak bondage Here is the story of Ivan Ponomarenko, a former farmhand, now a collective farmer "My father was a cowherd for wenty years on the estate of a big landlord manned fuscher. We were a big family, thritters of us, all huddled together in a little mud hut. We never had a horse or a cow, our livestock consisted of half a dozen hens. On the 1.3 acres of land we had, we planted potatoes. During 1914 18 I worked on the estate of Grand Duke Michael, the brother of Tear Nicholas. I earned around forty roubles a year. Cab bage soup and millet was what I fared on it was only on big holidays that I tasted meat."

This is how the poor peasants lived in Tearist Russia, nor were the middle peasants much better off

2 In November 1917 the workers and peorants drove out the landlards and capitalists, put an end to private property in land and turned over the big estates and the monasterial lands to the working people. The countryside begon to emerge from its age old ignorance and to relathou its life along new lines.

The Communist Party and the Soviet Government showed the possants that the only way they could put an end to hulde exploitation and with it to poverty, was by passing from petty individual farming to large scale social iced forming. The Soviet peasantry adopted this way and began to set up ortels—associations for the joint cultivation of the land—and in some cases on even higher form of collective farming—agricultural communes.

3 In 1921 our village of Yurkus organized a commune which we called Equality Commune. It was started by a number of Red Armynnes who had returned to the village after the Cavil War—Auktor Sologub I van Chaplyga Yegor Simonenko, Pavel Chernedon Afansay Pavoarov and my father, Vikita Klimenko, all former peasants of Yurkus On Turally the Commune mediaded elsen families. They received

land that had formerly belonged to one of the landlords' estates, pooled their horses, come and agricultural implements, and, disregarding the kulaks' venomous threats and dire prophesies, set to work.

At first things were quite difficult. The Commune lad no seed, only five horses, and nothing but a seeder and a bucker as regards equipment. But the Government gave us a helping hand, and the Commune began to grow and become strong. By 1927 it was afready cultivating 925 acres of land and had 17 horses, 4 pairs of oxen, 42 cows, a large number of horse, sheep and noutlive.

Starting with 1918, peasauts began to abandon their individual methods of farming and to adopt collective cultivation of the land. In addition to the communes, attels, or agricultural co operatives, began to appear. The poor peasants were the miniators of these associations and their leading members. The middle peasants waited to see how things would turn out, undeeded. However, when they saw with their own eyes the advantages and profit resulting from working in common they too began to enter the collective farms (kollshneer).

The State supplied the kolkhozes with seed, machinery and other agricultural equipment, and accorded them various privileges. With every year the number of collective farms increased. In 1918 there were 1,600, in 1923, 12,609, in 1927, 18 240, and by 1928, 33,258.

The influx of poor and middle peasants began on a large scale in 1929. By that time the Soviet Union, having restored its economic life after the devisation of the imperialist war and the Civil War, was developing industry at a rapid pace. The countriscide was supplied with thousands

of first class agricultural machines. The collective farms expanded and took firm root. In 1930 their number increased to 85,900, and by 1934 it had reached 233,300.

At the end of 1929 the various small kolkhozes and communes in our village, including our Equality Commune, merged to form the big new Stalin Commune. Our crops increased every year, we acquired new machinery and equipment, our moone grew ideality.

It was not entirely smooth sailing, however. Not every 'er of the Commune came to work on time, nor did everyone work equally well. Yet all the members shared the benefits of the Commune equally.

At the Congress of Kolthor Shock, Workers our chairman, Privotaros, had a talk with Stalm Stalm asked him many questions about our Commune. He wanted to know whether the members had cows, pigs and poultry for their personal use, and what difficulties they encountered. When he had heard all the details, he advised us to adopt the Rules of the Agricultural Artel and to supply every household with a cow, poultry, and so on

We followed his advice and reorganized our Commune into a kolkhoz along the lines of the new Rules of the Agir cultural Artel. The kolkhoz members were provided with caws, pigs and poultry for their personal use. We instituted rigid control of each members' output and divided our income in accordance with the number of work day units each member of the kolkhoz had to his credit.

#### 4. What is a work day unit?

It is the equivalent of the average amount of norh that can be performed by a collective farmer in one norking day, as fixed by the standard quota set for each type of nork. These quotas are fixed for each collective farm in accordance with the condition of the machinery, the draft animals the soil, the difficulty of the work, the degree of skill required, and so on For the performance of the specified days quota of work the collective farmer is credited with one work day unit

If in the course of the day a holkhoz member performs more than the specified quota he is credited correspondingly with more than one work day unit. This his share in the collective farm income depends on the quantity and quality of work performed. The work day units are calculated and recorded by the head of the brigade in which the collective farmer works and by the quality inspector after the work has been inspected.

This distribution of income according to the work per formed helped to improve discipline and increase labour productivity. The farm began to develop even more rapidly

The collective farm Rules definitely specify that on enter in a kollhoz the peasant toust hand over to it the land he has been using and also his draft animals and agricultural equipment. Cows domestic animals and agricultural equipment to socialization nor is the peasants' personal property. The public buildings of the collective farm—tables and sheeds for its livestock, and poultry, granaries clubs etc—are in the collective use of the farm. In addition every kolkhoz household is allotted a plot of land for personal use where a vegetable garden or orchard can be cultivated for the personal use of the house hold.

5 To assist the collective farms the Soviet Government has established machine and tractor stations all over the country. At present there are 6350 such stations in the

Soviet Union At the end of 1933, 183 500 tractors, 153,500 harvester-combines, 195 500 formes, hundreds of thousands of tractor-drawn ploughs, seeders, cultivators, complex threshors and various other up to date agricultural machines were employed in the Soviet fields.

The attention accorded the peasants by the Soviet Goernant, its constant concern for their welfare inade possible the successful introduction of universal collectivization and transformation of the USSR from a country of small backward astroculture into a land of mechanized agri-

ture on the largest scale in the world

6 In the USSR today there are 213 300 hole hozes which unite 18 800,000 peasant households, or 93 5 per cent of all the peasant households in the country

Our sollective farm numbers 674 families, 518 of which were formetly families of poor peasants. Nearly 30,000 acres of land have been reserved to us. The farm includes 1,400 acres of layfield, 9,900 acres of pasture, 104 acres of woods which serie to protect the fields from winds, and 1,081 acres of vegetable gardens and orchards. Besides this, several hundred acres of land constitute the plots in the collective farmers' personal use.

The kolkhoz management board is elected at a general meeting of the membership Important matters such as the distribution of income, capital construction and large pur chases, are decided on only by the general meeting

In most of the collective farms the members are divided into brigades. We have twelve production brigades, whose heads are elected by the general meeting. We also have an aeronomist, several breeding experts, and a veterinarian

We have 13,330 acres under field crops, 60 per cent of which are grain Industrial crops are raised on 1,270 acres, cotton occupying 1,135 acres. The rest of our fand is allotted to fodder, vegetables and gourds.

Our collective farm is located in the South of the Ukraine, by the Sea of Azov. This region is rather arid, but we are learning to master nature and our farm has large harvests of all crops every year. Despite the exceptional aridity of the summer of 1938, our average grain yield was 1,456 lbs per acre and the yield of non irrigated cotton, the cultivation of which we first introduced five years ago, amounted to 715 lbs ner acre.

Scientific methods of farming and mechanization ara helping is to combat drought. We are extending the area of acitum and early spring fallow for grain crops, ploughing the fallow in good time, and weeding it by tractor as often as six times. We plough by tractor to a considerable depth 895 inches and use large quantities of polassium, phosphate and nitrate fertilizer in addition to manure. We sow only high grade selected seed. For our spring crops—cotton, oats barley and the rest—we always plough the land to a good depth in the autumn or early in the apring. We are boldly applying the latest discoveries of agronomy and the experience of the foremost Stakhanovites on our fields. Thus, for instance, versalization methods recently evolved by Academician Lysenko have enabled us to increase the yield of cereals and cotton by 135 180 lbs near acte.

7 Mechanization is a most important factor in increasing the yield in our collective farm. The entire spring and autumn ploughing is done exclusively by tractors. In 1938, 977 per cent of the area under grain was harvested by combines. All the land left fallow for the 1939 crop was

tractor ploughed, as was 77 per cent of the land ploughed in the autumn Weeding, harrowing, clearing the field of stubble, and other processes have also been mechanized

The number of our Inestock is increasing as well. Our collective farm now owns 200 head of eattle, 460 horses, 7,000 sheep and 360 pigs, exclusive of the animals that are the personal property of the collective farmers themselves. The "stock is kept in light, warm and any buildings, which running water and are allows clean and orderly

3 Big progress in stock raising has been made throughout the country. In 1933 alone, the number of horses in the kolkhores increased by 8 per cent, the number of colts by 9 per cent, of sheep and goats by 19 per cent and cattle and mass by 6 per cent.

The increasing yields and growing productivity in atokraising are accompanied by an increase in the wealth of the collective farms and in the material well being of the collective farmers themselves

Whereas in 1930 the gross-income of our kolkhoz was 424,000 rubles, by 1938 it had reached 3,300,000 rubles

The greater part of the income is distributed among the members in accordance with the number of work day units recitited to them, 4.3 per cent goes for government payments, 0.8 per cent for managerial expenses. We also spend large sums for developing the farm and providing conveniences for our members. When the Commune was first organised, we did not have a single decent huilding, not a single machane of any kind. Now our streets are lined with well built houses. We have 3 power engines and 9 trucks. Every brigade has tiss site. The animala are housed in nearly built modern sheeds and stables. Our buildings, tools and machinery total a value of nearly 2,000,000 rubbles.

In 1933 every collective farm household in the grainregions received on the average of 1 ton of grain clear for the year By 1937 this amount had risen to 2 36 tons

The total cash income of the collective farms of the USSR has increased during the same period from 5.661.900.000 rubles to 14.180.100 000 rubles

- In 1938 our kalkhoz distributed 1,960,000 rubles in money as the share due for work day units. The income in kind is also divided in accordance with the number of work day units, after deliveries to the State have been made pay ment has been rendered to the machine and tractor stations for their services, seed has been set aside for the next sowing and fodder has been provided for the collective farm cattle. In 1938, our kolkhoz members received 11 lbs of grain and 5 rubles 10 kopeks in cash for every work day unit. Take collective farmer Borodin's family This family received 67 tons of grain and 6932 rubles in cash as their share of the collective farm income. Collective farmer Ponomarenko's family received 6.2 tons of grain and 6,326 rubles in cash K Pakhomenko, a Stakhanovite, received 5 tons of grain and 5120 rubles in cash Most of our collective farm members received similar incomes
- A life of prosperity brings culture with it The Tairst Government dut is best to foster chausinism and dissension, it incited the Russians against the Ukrainians, the Ukrainians against the Jews, the Georgians against the Armenians and so on. In the USSR, with its Socialist culture, a great and inviolable friendship and aimity exists between the various peoples and nationalities.
  - 9 Russians and Ukrainians, Jews, Gypsies and Poles live and work in complete harmony in our collective farm

Ahalil Sautow is a Gypsy He spent most of his life wondering over the steppes His children were born in a cold, usual beaten cowered wagon Now his family is happy and prosperous

Makhail Pixnoy is a few He is in chorge of one of our brigades and commands the respect and affection of all our members His brigade has secured the high yield of 09 tons of grain per acre

, Boody a Moldavan, was for mony years a shepherd in the sun-scorched steppes, he worked for next to nothing for the Iulaks. Now he is a well to-do colelctive farmer, and is in charge of a section on our farm

Some twentwhee years ago before the Revolution, at was no easy matter to get permission to open a school in the country side, and most of the children went without any schooling. Now we have plenty of schools. The kolkkoo also has a moving perture theater for showing sound films, everal clubbouses a good library, a radio broadcasting station for local purposes and a power plant. This year the members subscribed to 23 000 roubles worth of books and periodicals. We have a maternity home a nursery, a good public bath and a barber shop.

The collective farmers homes are lighted by electricity, and comfortably furnished Nearly 3,000 of our members have breyeles. The young people go in for sports (300 of our members have received the Worshihov Badge for marks manship), and are enthiusiastic members of the club dramatics, singing and music circles. There are no illiterates in our farm. Eighty per cent of our members have had an elementary or secondary education, and 20 of the members have had an analysis education. One 500 children attend the ten year

secondary school Twelve of our young people have graduat ed from agricultural or industrial training schools

Hundreds of people who formerly went unnoticed have developed into capable executives in Government and public bodies A Proviatov formerly chairman of our kolkhoz. is now chairman of the executive committee of the District Soviet and has been awarded the Order of Lenin by the Government N Pikulsky is manager of the repair shop at our Stalin Machine and Tractor Station P Letugin took a post graduate course at the Institute of Agricultural Economics and now occupies an important post in the People's Commissariat of Agriculture of the USSR P Ponomarenko 18 in charge of one of the biggest State farms in the Zaporozhie Region I Ivanov, a former member of our kolkhoz, is the chairman of a district executive committee in the same region The names of Feshchenko and Valovaya brigade leaders outstanding for the big harvests they secured are known far beyond the bounds of our region Grigory Koshka, one of our shepherds is an outstanding Stakhanovite who gets letters from collective farms all over the USSR. He has achieved a record increase-over 140 lambs for every 100 eves-in the size of his flock

10 The collective farm system has opened broad prospects for the peasant woman both in production and in public life It is helping to efface the distinction between town and country. Remoulding economic life in the villages, it is radically refashoning the people as well.

In February 1939 our collective farm was awarded the Order of Lenin by the Government for its outstanding achievements

## MACHINE AND TRACTOR STATIONS

## A OSKIN

- Huge tractor production, 2 Financed by State
- 3 Proceeds go to the Government 4 The difference 5 Fifteen lakhs tractor drivers.

The Soviet Union completed two Five Year Plans of common development. In the space of ten years (1929) 1939) large-scale industry in the USSR increased its output by almost 400 per cent. A new array of mighty industrial plants mills and factores arose throughout the country.

The Rostov Agricultural Machinery Plant alone produces more machines per year than were produced by all the agricultural machinery plants of Tsarist Russia

Character tractor works were built at Stalingrad and Character combines were opened at Stratov, Zaporotohye and Rostov I machine building and tractor production the USSR advanced to first place in Europe and second in the world while in output of harvester combines it rose to first place in the world.

Thanks to large scale socialist industry, the Soviet Union was able to reorganize agriculture on completely new lines By now, 18890,000 peasants households, 93 5 per cent of the total number, had jound colective farms. The Soviet government supplied the collective farms with hundreds of thousands of tractors and harvester combines, a vast number of motor trucks, tractor drawn farm supplements and other machine trucks, tractor drawn farm supplements and other machine.

This equipment, the last word in technical progress, is concentrated in the Machine and Tractor Stations (M.T.S.), which have become the principal state enterprises in the countryside, servicing over 250 000,000 acres of collective from land

In 1930 the U.S.R had 1.88 Machine and Tractor Stations. By the beginning of 1939 their number had increased to 6,350, a great network extending from the White Sea to the Black. Sea from the Western frontiers to the Fat In 1938, the Machine and Tractor Stations serving the collective farms had 130 000 harvester combines 160 000 motor trucks, 105,000 threshing machines and 394 500 power ful tractors, and their number is steadily increasing. In addition there are hundreds of thousands of other machines and mechanical appliances in the Machine and Tractor Stations as well as a large number of well equipped repair shops

2 The Machine and Tractor Stations are financed by the State and have no farms of their own I in 1938 alone the State assigned 7000 0000 roubles to the Machine and Tractor Stations

The work of each MTS is planned in conformity with the worl of the collective farms which it States.

The stations work on the basis of a standard contract with the collective farms in their area

Under this standard contract, which is legally binding, the particular MTS undertakes to do certain work of a definite quality by a definite date in the given collective farm. On the other hand, the collective farm has specific agrotechnical and other duties to perform. It must do part of the work, mainly of an auxiliary nature, and provide draft

animate to Hauling supplies of fuel for the tractors, and other purposes

Through the Machine and Tractor Stations the State

plans the process of production and the introduction of the latest scientific farming methods on a wide scale, thus ensuring big harvests regularly

The work performed by the Machine and Tractor Stations or paid for in kind by the collective farms according to the fixed for each class of work. Thus, for threshing, the collective farm gives the MTS from \$t\$ to 6 per cent of the grain threshed by MTS threshers.

3 The Machine and Tractor Stations render the entire proceeds to the state

The Machine and Tractor Stations are well staffed with engineers, mechanics, agronomists, expert bookkeepers and accountants, land reclamation experts, hydraulic engineers<sup>2</sup> and other trained men. Here we might add that the Machine and Tractor Stations are bound by contract to train a regular contingent of the collective farmers for skilled work.

During cleven months in 1933 the amount of tractoring formed in the collective farms by the Machine and Tractor Stations came to the staggering figure of 481,155,000 acres of conventional ploughing i.e. pioughing plus all forms of cractor work—sowing harvesting, etc. Collective farm harvests have increased correspondingly. In Tarist Russia the harvest of grain crops never exceeded 30,000 600 tons, while in 1937 the grain harvest in the USSR reached 111,500,000 tons.

Before the revolution the cultivation of tea, citrus fruits soya beans, kenaf, hemp, sesame, and rubber plants was unknown in the Russian countryside. Now, with the help of the Vachine and Tractor Stations the collective farms

are making splendid progress in the cultivation of these and many other plants.

The concentration of machines in the Machine and Tractor Stations and the merging of the peasant farms into collective farms controlling vast areas of land have made it possible for many machinery to be used in agriculture to the utmost advantage

In 1938 the average area farmed per MTS tractor was 1.015 acres.

Stakhanovite tractor drivers cultivate as much as 5,000 acres with wheel tractors and up to 12,500 acres with caterpillar tractors

The tractors on the collective farm fields do not work singly, but in teams consisting of a number of tractors with the requisite outfit of appliances and agricultural machines. The work of these teams is directed by mechanics and agronomists. Skilled men from the MTS repair shops see to it that the machines are kept in good order. The MTS tractor teams are attached to a definite collective farm for the whole season to complete all the work undertaken in the

Through the Machine and Tractor Stations the collective farms are also served with harvester combines which have become the principal harvesting machines in the USSR harvesting about one half of the total collective farm area.

In one season, harvester combine operator Bonin of the Steinhardt Machine and Tractor Station, in the Krasnodar Territory, harvested 4,940 acres of land under cereals, an average of 185 acres a day 2,950 tons of grain passed through his bunker.

Thanks to such thorough mechanization, farm jobs take much less time than formerly, and the collective farmers are able to get the sowing and harvesting done quickly without losses

 Prokhorov and Susopatieva of the Red October Collective Farm, Vozhgal District, Kirov Region tell us what a difference the Machine and Tractor Station have made

"In the old days the peasants had to sweat blood for every pood of grain. We got from 300 to 375 pounds from

acre Now we have the Machine and Tractor Station to

's us In 14 hours a tractor ploughs 24 acres, and a

combine harvester harvests 2½ acres in half an hour The yield per acre has increased to 1500 and 3 000 pounds'

The figures for 1937 show that collective farm labour is six times more productive than u.a.s farm labour in Tsarist Russia. Up to date mechanization is making agricultural labour more and more like industrial Jahour.

The collective farms have their own electric power stations, clubs theaters and moving picture houses, labora tones, schools nursernes kindergartens hospitalis, athletic fields and radio centres. Farm life is rapidly coming up to unban standards.

Thousands of peasants' sons and daughters are studying in universities. Lat year alone agricultural colleges gave the Machine and Tractor Stations and collective farms 12 732 experts in agronomy, vetermary science, scientific animal huvbandy, irrigation, hydraulic land reclamation, mechanics and surveying. Every year about a million persons take courses un mechanics.

In the village of Vloskovskoye Izobilensk District Orjonikudze Terntory, there are five schools, with a total attendance of I,600 children and a teaching staff of 43 There are ax stores, a hospital, a clinic, a drug store, a club with a library, a central school for collective farmers from the surrounding districts and, of course, a Machine and Tractor Station—the industrial centre of the new, collective farm village.

The number of professional people in Moskovskoye is constantly increasing. Two local peasants have become professors, seven—doctors, thirty six—teachers, the chemagronomists eight—engineers and ten hold commissions in the army. Before the advent of collectivization the two brothers, Michael and Alexei Tohin worked as faim hands for kulaks. Now Michael is a colonel in the Red Army and Alexei is a doctor. Fian Charko, formerly a poor peasant, is now a scientist and lectures at a college in Leningrad.

Or take another village, Koltsovka, Vurnarsk Distruct Chuvash Autonomous Soviet Socialist Republic Not so long ago the charman of the local collective farm was Korotkov He proved to be a capable executive and was promoted to a lingher post. Now he is the People's Commissar of Agriculture of the Chuvash Republic

There are many villages like Voskovskoye and Koltsovka in the USSR Collective farmers become People's Commissiars, tractor drivers become academicans, milkmads become members of the Government Such are the opportunities open to all in the collective farm sublages.

In the old days there was no mass training of technical personnel for work in the countryside, there were no schools for young talent like the machine and tractor stations which are now training skilled labour for our socialist farms. New figures have appeared on the trutal scene, people with seim industrial professions formerly unheard of in the countryside

5 By the most modest estimates the Soviet countryside has 1,500,000 tractor drivers and harvester combine operators, 121,000 truck drivers, 240,000 collective farm chairmen, over 535,000 field foremen and approximately 264,000 stockfarm managers and foremen

This wast army of skilled people is working hard to increase the productivity of farm labour. In its front ranks are the Stakhanovites, people who know their work to perfection people who have introduced new methods and efficient organization of work.

Take the Stakhanovites of the Kaganovich MTS in the remodar Territory. At this station, which employs 24 tractor teams, there are 200 tractor drivers. A hundred and forty-right of them fulfil their assignments 200 per cent and over. Five of these teams consist entirely of Stakhanovites Each tractor driver in these teams ploughs 18 acres with three coulter ploughs to a depth of 7.9 inches. And the assignment is 86 acres.

The assignment for harrowing is 90 acres but these tractor duriers do 1955 acres. The assignment for scarrifying is 42 acres, they do 138 8 acres. The days' assignment for combine harvesting is from 19 to 22 acres. Some of our Stakhanovite combine operators harvest 1730 acres of grain in the 22 days of the harvesting season.

Thousands of Soviet combine operators harvest from 2.500 to 5.000 acres in one season

The Stakhanov movement in the countryside is advancing by leaps and bounds

Willions of peasant families receive from 16 to 25 and motions of grain a pear in their collective farms. In addition to this income in kind the collective farmers receive cash Exceptionally large money incomes are received by the collective farmers in the cotton, flax, stock raising, sugar beet growing and citrus furth districts.

Before the advent of collectivization, Gerassimov, now a member of the Dimitrov Collective Farm in the Narimanov District, Stalingrad Region was a poor man. In the collective farm he became an expert farmer, a Stakhanovite. In 1938 his share of the collective farm income was 14,000 roubles plus several toos of grain, vegetables and other produce.

In 1938 in the Khanlar District of the Azerbaijan S SR the Thaclman Collective Farm, consisting of Germans, received 4,450,000 roubles for its produce The family of Robert Schmidt received 7,500 roubles in cash and 4,700 roubles worth of farm produce. In 1938 this collective farm spent 778,000 roubles on building extensions and cultural service for the collective farmers.

There are tens of thousands of collective farms like this one in the USSR

In 1938, with my brother Arkhip, a combine operator like myself I harvested the collective farms in the Ilek District of the Chkalov Region In 41 days the two of us together harvested 12,933 acres Our earnings came to 42,315 roubles

More and more collective farms are getting the benefit of MTS service, and increasing their incomes beyond the million rouble mark. In the Nikolaev Region in the Ukrame 35 collective farms have become millionaire farms. In the Tenruk District, Krasinodar Region 20 collective farms each receive incomes of over a million roubles. In the Ferghana Region, Uzbek SSR in 1938 the number of millionaire collective farms rose to 320.

Under the collective farm system life in the villages of the USSR has become prosperous and cultured Socialist industry and collective agriculture complement each other, each assisting the other to attain further progress

## SOCIALIST FARMING

### RY

## K RORIN

Wretched existence. 2 Amalgamation of peasant farms. 3 No more hired labour. 4 First place in the world. 5 Sugar beet and flax. 6 High productivity 7 Stock raising 8 Rive in moome. 9 Government and to Hundred agraphical research institutes.

On the morrow of the Creat October Socialist Revolution ine Soviet Government issued its Decree on the Land The land which for many centuries had been the object of the peasantry's struggles was nationalized. It was proclaimed the possession of the Socialist state. Landed proprietorship was abolished. Over 370 000 000 acres of land that had formerly belonged to the landlords the Tsar's family and the monasteries was transferred to the peasants for their free use, in addition to the land already held by them. The peasants were released from the burden of annual rent payments to the landlords which amounted to over 500 000 000 gold roubles. The Investeck and farm equipment confiscated from the landlords were also turned over to the peasants.

Before the Revolution the pensants led a uretched extensive They were rublesty exploited by the land lords and kulas, fulled they sool with antiquated imple ments, eked out scanty harvests and suffered from frequent crop failures Rum and starvation always stared them in the face The position of the peasants improved materially after the Revolution, which gave them land and freed them from their bondage to the landlords

However, the agriculture of the country represented as it was by 21,000,000 small and puny peasant farms, still remained in a backward state, without any prospects of extensive development. The division of the land into small sholdings was not conducive to the introduction of tractors, horizontal theorem in the small size of the farms afford the necessity opportunity for the application of scientific methods of farm ing and for pioper crop rotations. The houndaries between the individual peasant holdings were marked by narrow strips of land overgrown with weeks which affected the neighbouring fields as well. Here was another instance of the econo time water that resulted from the prevalence of tiny individually run farms.

Doung to the extremely low level of productivity of lower to the small peasant farms, the peasants had but very little gram surpluses left for sale over and avobe the amount they needed for their own consumption. Thus, for instance in 1927 the production of gram in the US SR had reading 1921 per cent of the pre-war level yet the grain available for sale to the towns amounted to harely 37 per cent of the pre-war total.

At that time the Soviet State, in order to provide for the needs of the urban population, had to purchase a considerable portion of the grain from the rich farmers the kulaks—who owned large tracts of land were hostile to the new, Socialist order and did everything to disrupt the Government's grain purchases and to cause faintie in the country. The country was faced with the alternative either to include the properties of the analysis farming—which would have entailed the run of the bulk of the peasantry, the disruption of the alliance between the working class and the peasantry the strengthening of the kulaks, and the defeat of socialism in the countryside—or to take the road of amalgamating the small peasant farms into large scale Socialism farms, into Julkhoete—collective farms, canable of using tractors and

modern machines—and thus bringing about a rapid provement in farming and a rise in its output and market ble surpluses

Naturally the Soviet State chose the second road—that of developing agriculture along the lines of collective farming

2 However the omalgamation of over 20 000,000 peasant farms into holkhozes was no cosy matter. It was not a job that could be accomplished at short notice. It was not necessary to start with the industrialization of the country land to the built up capable of supplying agriculture with wait quantities of modern machines and chemical certilizer. Furthermore, it was necessary to demonstrate and explain to the peasants, who had been accustomed to work each for himself on his own tiny strip of land, the advantage and benefit to flarge scale farming. For a number of years the Soviet Government worked hard and persistently to bring about these necessary conditions.

As industrialization was progressing, more and more machines were sent to the rural districts. In addition, the state granted the peasants liberal credits and sent people to help them organize. The peasants saw before them the example of the large state farms, of the already existing collective farms and the first State machine and tractor stations which served the collective farms, they saw the wonderful

work of tractors and other machines capable of ploughing up any "hard ground," any virgin soil. All this induced the peasants to join the collective farms in ever increasing numbers.

Soon it became a mass movement, which assumed particularly large proportions in 1929 30 it was no longer isolated groups that joined collective farms, but the poor and middle peasants of whole villages and districts merged their farms and organized kolthozes. The State, on its part, assisted the new kolkhozes in every way.

The successes of Socialist construction in the villages evoked increasing hatred and resortment among the kulais, who realized that collectivation spelt the end of their exploitation and oppression of the labouring peasants Many an initiator and fighter in the cause of collective farming of the same detect by kulaks in those years A good deal of collective farm property perished in fires set by enemy incondiaries.

Even prior to the mass influx of peasants into collective farms the Soviet Government had put into effect a number of measures designed to restrict the kulaks, who had been disrupting the State grain purchases and attempting to prevent the supply of grain to the country. The Soviet Government had imposed higher taxes on the kulaks, had required of them to sell grain to the State at fixed prices, issued a law on the renting of land, which limited the amount of land kulaks could use, and law on the employment of hired labour, which limited the scope of kulak farms

Mass collectivization required the transfer to the collective farms of all available land Since large tracts of land were held by kulaks, the peasants combining in solihores drove their ancient enemies from the land, config.

cated their Inested, and machines, and demanded of the Soviet Government that the exploiters be deported. The mass movement of the peasants to join collective larms and the spread of universal collectivisation enabled the Soviet Government to proceed from the policy of retricting the kulaks to a new policy, the policy of eliminating the kulaks as a class.

3 The Soutet Government repealed the laws on the renng of land and the hiring of labour, thereby depreung the ladest both of land and of hired labourers. It lifed the ban on the expropriation of they kulaks and permitted the peasants to confiscate cuitle, machines and other farm properly from the ludest for the benefit of the collective farms

The millions of peasants wholeheartedly supported this policy of the Soviet Government, and it was crowned with manifest success

With the help of the Socialist industries, which were supplying the countryside with increasing quantities of tractors and agricultural machines, the State farms and collective farms soon grew and developed into a serious force. Already in 1930 the collective farms and State farms produced more than 6 500,000 tons of grain for the market, thus exceeding by far the amount of marketable grain formerly produced by the kulaki.

At present 935 per cent of all the peasant households in the Soviet Union are united in 243 000 Lolkho-er. This does not include the fishing co-operatives and the industrial co-operative societies operating in the rural districts.

In 1938 the State farms and collective farms of the Soute Union had at their disposal 483,500 tractors with an aggregate espacity of 9,256,200 hp., 153,500 harvester combines and 195,200 motor trucks. About 90 per cent of all

the tractors and combines now operating in Soviet agriculture were turned out by Soviet plants during the period of the Second Five Year Plan (1933 37) In 1937 the Soviet chemical industry supplied the farms with 2 798 000 tons of nuneral fertilizer whereas in 1913 Russian agriculture used only 230,000 tons of nuneral fertilizer most of which was imported from abroad

The collective farms are rapidly approaching the point when all the farming processes will be mechanized Tractors are being utilized with increasing efficiency. In 1938 the average amount of field work performed by a wheel tractor covered an area of 1015 acres, and that performed by a caterpillar tractor covered an area of 2.755 acres

The Soutet Umon holds first place in the world is respect of efficient until ation of tractors. As for har vester combines the average area harvested per 15 foot combine in 1938 was 745 acres.

The sown srea mereased from 2-93 350 000 acres in 1913 to 338 143 000 acres in 1938. An important feature worth moting in this connection is that while the area under grain crops increased in the period inentioned by 4.5 per cent the srea under industrial and garden crops increased approximately 2.5 fold, and that under forage crops nearly 7 fold

Farming in the Soviet Union is becoming more diversified and productive Refore the Revolution Russia produced annually 740 000 tons of cotton Almost as much cotton had to be imported each year from abroad in 1938 the cotton cop in the Soviet Union amounted to 2 090 000 tons. Today the textile industry of the USSR is fully supplied with the textile industry of the USSR is fully supplied with

5 In the output of sugar beet and flax the Soviet Union holds first place in the world In 1938 the Soviet Union

produced 546 000 tons of flav fibre as against 330,000 tons in 1913. The output of sugar beet increased from 10,900 000 tons in 1913 to 16 680,000 tons in 1933.

As for grain crops, the position is as follows in 1913 which was considered a bumper crop year, Russia barvested 80 100 000 tons of grain , whereas in 1937 the Soviet Union reaped a harvest of 120 290 000 tons, and in 1938-despite the drought in the eastern and south eastern regions-94 990,000 tons There has been a corresponding increase in the amount of grain produced for the market Statistical data referring to Tsarist Russia before the war show that in those years an average of approximately 21,300,000 tons of grain was placed on the market. In the Soviet Union, bow ever the average amount of grain crops available for sale in recent years was 37,700,000 tons. It is further necessary to bear in mind that while 716 per cent of all the marketable grain in Tsariet Russia was controlled by landlords and kulaks, all of the marketable grain in the Soviet Union at present is produced by Socialist enterprises-by collective farms and State forms

6 It is the high productivity of the State farms and collective farms that has enabled the Soviet people to fully solve the problem of supplying the vast country with all the mark-table grain it needs

Prior to the October Revolution grain growing was very hitle developed in a number of central and northern regions, which were known in those times as "consuming" regions. Wheat was not sown at all in these sections of the country. At present these regions produce most of their own gray, including wheat, which gives splended yields. Thus, for anstance, the Pobeda Kolkhoz in Dmitroy District, Voscow Region, reaped a harvest of 105 tons of writer wheat per acre in 1938 The former consuming regions are thus being transformed into producing regions

Great progress has been made in the Soviet Union in the growing of tea, citrus fruit and other crops which were for merly imported from abroad. The extent of the expansion of sub tropical crops in the Soviet Union may be gauged from the figures illustrating the development of agriculture in the Georgian Soviet Republic Thus, 3,544 acres all told were planted to sub tropical crops in Georgia in the cour of 32 years prior to the Revolution (1885 1916), whereas the area planted to sub tropical crops in Soviet Georgia in the area planted to sub tropical crops in Soviet Georgia in 17 years (1922 38) amounted to 163,272 acres, the crops including tea, tangerines, lemons, oranges, high grade tobacco, as well as various valuable and rare trees such as the tung tree, the bay laurel, the eucalyptus, etc.

In consequence of the growth of industry in the eastern regions of the Soviet Union and in the formerly industrially backward republics, of the creation of new cities and industrial centres and of the development of industrial depending on agriculture for their raw material, it has become necessing to introduce such crops as potatoes, cotion, flax and sugar heet in many parts of the country where they were not grown before While Central Asia still remains the principal source of the Soviet Union's cotton supply, cotton is now grown of the Soviet Union's cotton supply, cotton is now grown textensively in Transcaucesian and in many districts in Stalingrad Region, in the Ukraine, in Crimea and on the Stalingrad Region, in the Ukraine, in Crimea and on the Stalingrad Region, in the Ukraine, and Crimea in the old

Great progress has been made in recent years in the old sugar beet districts But, in addition, considerable amount the of sugar beet are now produced in Western Sheria, in the kirghiz Soviet Socialist Republic, in the Far East and in a number of other regions. Moreover, the Soviet beet growers have succeeded in raising the sugar content of beet by one per cent, which represents an additional 20,000 ton increase in the output of sugar

7 The stock raising industry in the Soviet Union has also made steady progress in recent years. In July 1938, the number of head of large horned eattle was 63,200,000 as against 60,600,000 in Russia in 1916. Practically every collective farm has its stock raising and dany department. The Thademann Kolkhoz, for instance, in the Ramenskoye District, near Moscow, has been obtaining in its dairy an average annual yield of 4,800 quarts of milk per cow. There are thousands of dairies obtaining as high a milk yield as that of the Thademann Kolkhoz.

The Stalin Kolkhoz an the Gunib District in Daghesian owns 36,000 sheep, and the stock is being steadily improved by cross breeding the local sheep with the "Wuertemberg," type The same kolkhoz has a stud farm with 570 thoroughbred horses and a dairy with 830 cows. Here, too, the stock is being improved, by cross breeding the native type with Swiss breeds. The Stalin Kolkhoz has an annual income of 2250,000 roubles.

The Krasny Budyonnovetz Kolkhoz in Levokum District, Orjonikidze Territory, owns more than 35,000 sheep of the memon breed and mixed breeds. The kolkhoz is justly proud of its droves of thoroughbred horses, both Don and English breeds. The annual income of this kolkhoz reaches 5,000,003 roubles.

These are but two examples taken at random

The economic activities of the collective farms are organized on the principles set forth in the collective farm Rules An important feature of these Rules is that, in addition to safeguarding the interests of the kolkhoz as a whole, provision is made in them for the personal interest of the collective

farmers. Every collective farm household has for its personal use a plot of land attached to the house, keeps a cow small livestock, poultry, etc

As a result of the assistance provided by the State every collective farm household now has in personal ownership at

8 The following figures illustrate the steady rise in the least one cow. meconics of the collective farmers In 1937 each collective farmer family in the grain growing districts received on an average 236 tons of grain as part of its share in the income of the collective farm, as against one ton in 1933. This grain was distributed by the kolkhozes among the collective farmers after they had laid aside the necessary grain and reserves for seed, stored away a sufficient amount to provide feed for the publicly owned livestock, completed their grain deliveries to the State and settled their payments in kind to the machine and tractor stations serving them The cash in comes of the collective farms increased from 5 661 000,000 roubles in 1933 to 14,241 000 000 roubles in 1937 and the greater part of this sum was distributed among the collective farmers

The collective farmers have mastered technique and show splendid examples of a Socialist attitude towards work. The

following are a few instances in point

The tractor drivers of Bartakovsky's brigade (Mocharsk Machine and Tractor Station, Ryazan Region) covered an average of 14,270 acres per caterpillar tractor in one season in the brigade of Vera Bakholdma (Talov Alachine and Trac Ivo Station, Altan Territory) the average per ChTZ caterpillar tractor was 12,612 acres Bakholdma is a member of the Suprems Season of the IVS of Research of the Suprems Season of the TIS of Research

Supreme Soviet of the USSR

The combine operators A I Bessonov and A 1 Shiridov
(Krasnokholmsk Machine and Tractor Station Chkalov

of a kolkhoz laboratory in the village of Karlovka, Poltava Region.

The wide educational opportunities open to everyone in the Soviet Union may be best illustrated by a few specific , instances I shall mention the case of my friend Kolesov, a combine operator like myself. For a number of years we vied with each other for better work. The great distance between the Steinhardt Machine and Tractor Station in the Kuban, where I was employed and the Tot-k Machine and Tractor Station in Chkalos Region, where Kolesos worked, was no obstacle Here is the story of holesov's life. In his younger years he suffered from want, toiled hard on his small farm and was dependent on the kulaks. In 1929 he joined a collective farm. When the machine and tractor station was organized in his district he went to work as a combine operator. attained a high degree of efficiency and was awarded the Order of Lenin Kolesov continued to perfect his technical knowledge and general education and became a Stakhanovite The people expressed their confidence in him by electing him deputy to the Supreme Soviet of the USSR. In 1938 Kolesov was Chairman of the Chkalov Remonal Executive Committee. With minor variations, Kolesov's story is the story of millions of Soviet people, ardent patriots of their Socialist country

I am now (1938) taking special courses in the Timiry aget Agricultural Academy in Moscow. My fellow students are 636 contern, 826 peasants, members of collective farms, 76 agriculturists and 652 employees. Before the Revolution only the children of princes, barons, landlords, merchants and kulakscould attend this Aadem.

Such is the path which the peasants of the Source Union have traversed—from semi startation and primitive farming methods to flourishing farms, a life of prosperity and the heights of culture and knowledge.

# RAPID INCREASE IN LIVESTOCK

# RY y LISKUN

1 Scientific research institutes 2, 35 tons of milk yield per cow annually 3 Artificial fertilisation 4 Crossbreeding 5 Darwinian Theory 6 Close contact with production.

The Great October Socialist Revolution, which trans formed the entire economic life of the country has brought about a material change in the sphere of stock raising as well In Tsariat times stock raising was practically the most back ward branch of agriculture in Russia The average annual yield of milk per cow was abut 1,400 lbs, the average annual ) teld of wool per sheep amounted to 2 86 ibs and the average carcass of beef equalled 2205 lbs

There was no "demand for the science of animal hus bandry in Tsarist Russia , and the only institution that dealt with the scientific problems of animal husbandry was the Zoo technical Laboratory founded by the Ministry of Agri culture in 1905

At the time of the Revolution in 1917 there were alto segether three colleges of agriculture maintained by the State Three more schools of agriculture which offered a higher course of study, were maintained by public organizations

In the small and scattered peasant farms of Tsarist Russia stock was raised only for consumption and to supply manure 're, while the number of head of stock was fairly
large, stock raising played rather a small part in the economic
hie of Tsanst Russia

Under such conditions science, naturally, played an junisquificant role. In the whole of Tsarist Russia there were 74 livestock experts with a scientific training. The budget of all the scientific institutions working in this field totalled about 100,000 roubles.

1 An entirely different situation obtains in the USSR at present. The problems of improving the stock and raising its productivity are dealt with in eighteen large exemption to search institutes, 78 regional and republican cootechnical stations with 206 branches in various parts of the country, and more than a thousand small laboratories functioning is collective farms. The budget of these scientific research with rations amounts to about \$10,000,000 roubbles a year.

In addition to this, fifty animal husbandry departments carrying on scientific research work have been organized in universities and other higher educational institutions

The existence of a close contact between the science and practice of stock raising gives us the assurance that in the very near future we shall be able to direct at will all the processes of reproduction of the berd of farm animals, as well as the output of the produce of stock raising. The magnitude of the problem may be appreciated if it as borne an mind that the Soviet State sets itself the aim to provide a supply of the products of stock raising that will fully meet the requirements of the population

The scientific agricultural institutions of the Soviet Union have mastered, during the hiref period of their work, all that is known to world science in the sphere of animal husbandry-

Nor is this knowledge confined to scientists alone. Tens of thousands of Stakhanovite workers engaged in slock raising employ scientific methods in their work and display creative ingenuity in their application. As a result, they have suc elected in raising the productivity of native breeds to a level which was formerly considered unattainable.

2 An annual yield of over 3.5 tons of milk per cow, a progeny of pigs weighing more than 1.5 tons on hoof from one sow, an average of over 11 pounds of wool per sheep of the merino Precose, Rambouillet and native merino breeds, a daily increase in the weight of porkers amounting 0.35 and even to 4.5 pounds per head, 1.65 and more eggs per laying hen a year over 265 pounds of honey per bechive, 100 per cent calving of cows and foating of mares, 100 per cent calving of cows and foating of mares, 100 per cent calving of caracul ewes, 265 lambs per 109 Romanov ènces and more than 140 lambs per 100 merino ewes—such are some of the results obtained by an intelligent application of the schice ements of world science in the sphere of animal husbandry.

Souce achievements in every branch of the stock raising industry one either on a par unit the world records or surpass them. We may mention the record of 'Poslushnitsa,' a cow producing 16 tons of milk a year (karasayeve 52ste Farm, Yaroslavi Region), or the tecords of some Soviet race horses, such as that of "Oulow which covered 0.99 miles in 2 minutes 3.4 seconds and 1.98 miles m 4 minutes 20.75 e. goods that of "Pyetushoh. a Russian Ammerican breed, which covered 0.99 mile in 2 minutes 3.5 seconds, that of "Podagra' which covered 1.98 miles in 4 minutes 2.12 seconds, etc.

The breeds of anunals are being improved by the method of crossing the native types with pedigreed stock, as well as

with the hetter local breeds. The State farms and collective are thus evolving new breeds insuring an unprecedented productivity.

Soviet science has accomplished a great deal of work in of matter of selecting the breeds that will best serve the purpose of unproving the herd in the Soviet Union. At present we have a scientifically elaborated plan for the proper territorial distribution of the various breeds that are used to improve the country a livestock.

3 In order to accelerate the process of improving the stock with the be I thoroughhred producers. Soviet science has perfected the technique of artificial fertilization of sheep cattle hogs horses rabbits poultry and even hees. A number of special apparatus has been designed and the methods of artificial fertilization have been so simplified that every sheepherd can apply them. The sperm of one ram is used to fecundate 5000 and in some mistances as many as 101200 evens in a season. The sperm of one pedigreed producer serves to fecundate 1200 mares on 1000 cons.

Important contributions to the science of artificial fertilization have been made by O Neuman V Milosanov and

a number of other prominent scientists

Over fifty million head of Investock have already been obtained in the USSR by the application of the method of artificial fertilization which makes it possible greatly to qued up the improvement of the herd and the introduction of new breeds. The further perfection of the methods of artificial fertilization will open up still greater possibilities along these three of the properties of the methods of artificial fertilization will open up still greater possibilities along these three of the properties of the pr

A Soviet science has also been able to register serious achievements as the result of experiments in cross-breed or with a view to combining the best qualities of a number of

breeds in one new breed. The most noteworthy achievements in his sphere are those of M. Vannow, member of the Academy of Sciences of the USSR. He obtained a new breed of sheep—the Askanya Rambouillet—combining the best qualities of the American and nature Rambouillet to Askanya Rambouil let is already superior to the American breed in point of here dutary transmission wood yield and weight on hoof

Academician M Ivanov has also produced a new bred of hog—the large white Askanya—combining the qualities of the native southern Russan variety and those of the large white English breed. The new breed is even somewhat superior in quality to the large white English hog and at the same time it is better adapted to the conditions of southern Ukraine.

Soviet science has achieved considerable success in elabo rating the methods of obtaining new breeds. By applying these methods, fivestock expert Filyansky, of the Bolshevik State Farm, has produced a new breed of sheep—the Caucasian Rambouillet. The livestock experts of Kazakhstan have produced a new breed of sheep, the carducoce, combining the fleece of the merino with a heavy tallow protuberance (steato pyga) on the rump, which is of great advantage in desert and semi desert conditions.

5 By applying the Darwinian theory in practice Societh breeders have demonstrated the great animal potence of environment and external condutions, in the form of feeding and maintenance, as a means for the transformation of animals. The author, for instance has succeed ded in proving that with proper feeding and good tending the native Kalanyk and Kirghiz cattle display an early maturity which makes these native breeds practically akin to short horns and Herefords.

At the age of two years and four months, the young that have been brought up according to my method easily reach a weight of 575-615 lbs., of a quality which is on a par with the meat of the best breeds of beef rattle. This method has now been introduced in 79 large State farms.

Soviet science is studying the chemical composition and nutritive qualities of various kinds of feeds produced under acrous climatic soil and farm conditions. Particular attention is being paid to the mineral ingredients of feeds and fodder. Soviet science is also considering and elaborating the hypothesis of Academician. Vernadsky to the effect that feeds contain elements of rare soils which apparently play an important role in the nourishment and development of animals, as well as of man.

The contributions of Soviet science in the sphere of animal husbandry include a number of new works dealing," with the appraisal of the biological characteristics of feed Professor A Solum has succeeded in establishing the vital importance of the presence of sistamin "A" in feeds for the proper nourishment of animals with young Feeding mairs products with the proper vitamin "A" content safeguards them against miscarriage and insures a strong and enduring progen. Similar results have been obtained in the case of sheep Particular success has been obtained in demonstrating the effect of vitamin "A" on the development of the voung of the merinos sheep.

The study of the biological characteristics of feeds will enable us to make up proper feed rations and thus to solve the problem of proper feed combinations

This problem, as well as the questions of mineral nourish ment, is being successfully dealt with, among others, by the Zootechnical station in the city of Pushkin, Leningrad Region, working under the direction of Professor M Dyakov

By changing the methods of the care of animals and adapting them to the individual psculiarities of the various types of livestock, the Stakhanovites of the livestock industry have succeeded in obtaining considerably higher average rates of productivity and have laid the foundation for a new and higher level of scientific stock raising.

6 One of the greatest achievements of Soviet science is its close contact with production. This contact but fair to bring about exceptional results. Whole districts are at present sying with each other in a spirit of socialist emulation for a higher productivity of stock raising. The collective farmers of the Ramensky and Lukhovitsky. Districts Vioicon Region have already achieved a mith yield of three tons and more per coo.

By applying scientific methods, the Soviet stock raising industry will undoubtedly succeed in the near future in mate railizing all the vast possibilities offered by stock raising carried on on a large scale and according to plan

It must also be pointed out that the State plan for the development of stock raising which is drawn up for every year on a strictly scientific basis, is in itself a great achieve ment

It uss as a result of planning and of the struggle for the fulfilment of the plans that in the five years 1933 1938 the herd of cuttle increased in the USSR by 616 per cent, the number of sheep and goats increased by 1012 per cent, and that of longs by 1829 per cent. In the same years the fierd of cuttle in Fascist Germany dimunished by 639 000 lead The increase in the number of sheep in the Societ Union in the one year 1937 done amounted to 2 times the entire fock of sheep in Germany The number of sheep in the U.S.R. increased in 1937 by 10,700 000 head, whereas the total imber of sheep in Germany in 1937 amounted to 4,633,569 'head

Stock raising in the USSR made further strides in 1938. In that year the number of horses in collective farms increased by 8 per cent and that of colts by 9 per cent, the number of cattle increased by 6 per cent, that of hogs by 7 per cent and that of sheep and goats by 19 per cent.

These are rates of growth which no other country in the world can boast of

## POWERFUL FOOD INDUSTRY

ВŸ

## P S ZHEMCHUZHINA

1 Largest in the world. 2 National income 3 Tre mendous output. 4 Fisheries 5 Tea plantations. 6 Surpasses the achievements of the capitalist countries.

1 In the course of the first itso Fice Year Plans the Sowet Union built up a powerful food industry equipped with the most up-to-date machinery and designed to meet the most modern technical requirements. The food industry of the Sowet Union renks such the largest in the world. In 1933 its output amounted to 59 times the total output of the food industry of Tsarist Russia in 1913. The Soiset Union now holds first place in the world in the output of 5th.

Tsarts Russias output of granulated sugar totalled 1,347,000 tons for the 1913 14 season. In the 1937 38 season the Soviet sugar industry produced 2,700 000 tons of granulated sugar which represents an increase of 100 per cent as compared with 1913.

The output of the State-controlled vegetable oil industry amounted to 571 000 tons in 1933, as against a total output of 264,000 tons of vegetable oil in 1913, representing an increase of 116 per cent

The output of canned goods by the State-controlled canning industry, exclusive of eo operative canneries, amount

ed in 1938 to 1 019 000 000 cans as against a total of 93 000,000 cans (computed in standard 400 gram, or 14½, ounce cans) in 1913 representing a nearly 11 fold increase

The annual output of confectionery goods in Tasrist-Russia totalled 70 000 tons. In 1938, the large scale confectionery industry (excluding the co-operative industry) produced 285 000 tons of confectionery. This represents a 12 6 fold increase.

Practically the entire output of these, as well as of all other food products remains in the country and is consumed by the population of the USSR

Tearist Russia—with her poverty and economic backward ness with her few industrial centres the primitive semi natural economy of her small peasant farms and the low standard of living of the workers and peasants—had no large scale food industry worth mentioning.

Mechanized plants such as fith plants meat packing plants large bread factories and large cameries were unknown in the food industry of old Russia. The manufacture of food products was carried on amid dirt and under bad sanitary conditions. Adulteration of products and cheating of consumers was the general rule.

The food industry was largely represented by handicaria and home production. The latter rould successfully compete with the factory products, because, owing to the unemployment prevailing and the semi-sine condition of women, labour cost next to nothing. The majority of the population subsisted on an extremely monotonous diet and the assortment of food products was a very limited one. Only an insignificant part of the population—the nobility, the urban bourgeoise and the professionals with their homens—could afford high grade

products The purchasing power of the masses of the people was at an extremely low level

The labouring people in Tsairst Russia always lived on short commons The worker's fare was meager. The over whelming majority of the peasants were starving. Meat was considered a luxury. Dairy products were considered a rich man's food.

The successes achieved by the Soviet machinery industry in the period of the Stahmst first two Five Year Plans furnish ed a basis for building up a powerful food industry. The victory of the collective farm system and the advantages of organized Sociabit labour in agriculture insure the mighty development of Sociabit agriculture and a constantly growing supply of aw material for the food industry.

The fulfilment of the first two Five Year Plans brought with it not only a tremendous advance of the national economy and its transformation along Socialist lines, but also a marked improvement in the material conditions and a great lines in the cultural level of the peoples of the US SR

2 In 1938 the national moone of the country was more than six times as large as in 1925 when it amounted to 10 800 000,000 roubles. Wages have been steadily rising year after year. During the period of the Second Five Year Plantone total wages of workers and office employees in the USSR increased 25 fold. In 1937 the average yearly wage was more than double that of 1932.

The Socialist countryside has kept pace with the cities in the improvement of its well being. In the course of four years (from 1934 to 1937) the total income of the collective farmers increased more than 2.7 times, and their cash income increased 4.5 times.

The improvement in the well being of the people was marked primarily by an improvement in their diet. As coin pared with 1932, the consumption of lutter by workers and office employees in 1937 increased nearly 2.5 fold, that of pork 3.5 fold, that of susages nearly 4-fold, that of wheat bread mearly three times and that of fruits and berries nearly 4-fold.

By 1937 the per capita consumption of sugar in the Soviet countryside had increased nearly 6 4-fold as compared with 1933, the consumption of confectionery had increased more than three times and that of bacon had more than doubled. As compared with the first half of 1937 the per capita consumption of vegetable oils in the first half of 1938 increased by 82 per cent, that of butter by 32 per cent, that of sugar by 17 per cent and that of soan by 25 per cent.

The data concerning the sales of milk, butter and cheese are also indicative of the tremendous growth of the consumption of food products in the Soviet Union. In 1917 a total of 1,220,900 tons of milk was marketed in Russia, whereas in the Soviet Union in 1933 the milk supply to the market amounted to 5,575,000 tons. The marketable butter supply in Russia in 1913 totalled 120,000 tons, whereas in 1937 in the USSR it amounted to 185,200 tons, not taking into account the butter sold in the collective farm markets. The output of cheese grew from 14,200 tons in 1932 to 31,000 tons in 1932 to 31,000 tons in 1932.

The improvement in the material well being of the working people has been accompanied by a steadily growing demand for the products of the food industry among the pepulation. This, in its turn, has given ties to an immense growth of the production capacity of the food industry.

The food industry of the Soviet Union is the principal supplier of food products to the millions of the Soviet urban population, while in the case of sugar, tea, confectioners and a number of other products, it supplies them not only to the urban population but to the whole rural population of the Soviet Union as well

In addition the State owned food industry supplies the entire population of the Soviet Union with a number of consumer's goods, such as laundry and toilet soap perfumery tobacco products, etc.

The demands of the population on the food industry are constantly growing. To meet these demands the various organizations of the food industry are turning out products or a weat scale.

3 Thus the Chief Confectionery Association which is the largest producer in the field, turned out 687 260 tons of confectionery products in the year 1938

Out of a total output of 1019000000 cans of goods in 1938, the Chief Canning Industry Association one of the largest State industrial associations accounted for 611 600 000 cans

The Chief Bakers Association which is the biggest organication in its line in the country turned out 8 196 000 t ns of bread and rolls in 1938

Bread factories were entirely unknown in Russia in Tearry times. Bread was then baked in small private bakeries notorious for their filthiness and had saintary conditions. At present 70 per cent of the bread produced in the Soviet Union is baked in large mechanized bread factories and bakeries equipped with laboratories in which the flour and other ingredients and materials are subjected to a thorough analyse and a check is kert on the quality of the bread.

The output of fish in the USSR is largely concentrated in the People's Commissariat of the Fish Industry In 1923 the catch accounted for by the four State-controlled organizations of the fish industry and the fishermen's co-operatives, amounted to 1469 000 tons. In this connection it should be mentioned that the fishermen's co-operatives receive technical and organizational assistance from the State motor fishing stations. By the end of the Third Five Year Plan period practically all the fishermen's co-operatives in the country were fully provided with the service supplied by these stations

4 The application of mechanical devices was entirely unknown to the Russian fisheries in Transi times. At pre-ent the Soweit trauler fleet in the northern unders alone yields annually 200 000 tons of fish. A large fleet of seiners and drifters has been built up and fishing by nots has been largely mechanical.

In 1938 the plants under control of the Peoples Computation of the Peoples Computation of the USSR yielded an output valued at 14 320 000 000 roubles (computed in prices of 1926 27). During the period of the first two Five Year Plans 1929 37) capital investments in the food industry amounted to 6900 000 000 roubles. These years witnessed the opening or operation of 21 meat packing plant 11 industrialized poultry farms a fish product plants 91 canneries 14 sugar tefineries. 250 bread factories 197 mechanized bakeries 82 creameries 25 tea factories 41 fruit and vegetable processing plants 14 vegetable oil extraction mills a large number of refringerating plants 34 fee cream factories 6th.

The tremendous growth of the output is accommanted by a considerable extension of the wariety of food products. Thus for instance in recent years natural fruit juices and canned fruit have been placed on the market in large quantities. At

the same time the chilling of fruits and vegetables has been introduced

In 1938 the confectionery industry turned out 2 678 varieties of confectionery as against 527 varieties in 1932 at the end of the First Five Year Plan period. At the same time the confectionery industry strives to supply the urban and rural population with goods of the highest quality. There has also been a marked increase in the output of high quality bakery products.

As a result of the organization of a large scale meat pack ing industry the requirements of the population as regards high grade meat and sausage are now being covered largely by the output of the meat packing plants

Following the example of the American meat packing industry the meat packing plants of the Soviet Union have organised the mass output of semi prepared and ready to serve products These products have become popular and there is a large demand for them The reason for this is quite obvious The radical change in the social conditions of life in the Soviet Union and particularly the widespread participation of women in political economic and social activities have entailed a considerable reduction in the time spent by women on house work. That is why there is a large demand among the population of the Soviet Umon for semi finished and ready to serve products which are a great help to women and lighten their hou chold tasks. In 1933 the meat packing plants turned out 203 000 000 cutlets as against a total of 50 600 000 cutlets in 1937. In the same year, 1938 the retail stores of the meat packing plants had on sale over 330,000 000 meat patties and 2,000 tons of meat dumplings There has also been an increase in the sales of ready weighed and wrapped meat

5 Tea, the demand for which in Tsarist Russia was entirely covered by imports, is now grown on a large scale in the Soviet Union The Georgian Soviet Socialist Republic is at present producing thousands of tons of tea annually.

In recent years an entirely new industry has been created—the factory production of ice cream In 1938 the output of ice cream amounted to 46,000 tons as against 4,000 tons in 1933 when ice cream was produced by handicraft methods

Wines are now produced in a larger assortment than ever before. In the past two years, a firm beginning base nada to build up a raw material and technical base for the production of champagne. Over 1,100 000 bottles of champagne were placed on the market in 1938. The measures that have been taken to develop wine growing and the completion of a number of well equipped plants would enable the wine industry to place 4,000 000 bottles of champagne on the market in 1938.

The growing demand for high grade food products has been paralleled by an equally increasing demand for perfu mery and toiled articles which is an indication of the greatly improved material conditions and higher cultural standards of the incondition.

The output of toilet waters increased from 9,400,000 bottles in 1932 to 20,100,000 bottles in 1937 buring the same years the output of eau de cologne increased from 9,100,000 bottles to 43,600,000 bottles, and that of perfumes from 10,500 000 bottles to 25,200,000 bottles. The output of face powder increased by 150 per cent over the output in 1932. The output of tooth powder and tooth paste in 1932 amounted in value to 30,000,000 roubles, as against 5,000,000 roubles in 1932 (in 1926-27 prices).

6 In the course of the first two Five Year Plan periods the Soviet Union has overtaken, and even surpassed, the most advanced capitalist countries in respect of technology A powerful machinery industry has been built up Socialist industries are organized on a large scale-larger than any where in the world In the food industry the handicraft and sems handscraft shops of old have been replaced by large modern plants well equipped with the most up to date machi nery and technical appliances

The Soviet Union has now set itself the aim of over taking and surpassing the most highly developed capitalist countries of Europe and the United States of America econo mically as well. The attainment of this aim would be accompanied by a rise in the productivity of labour further industrial development and the mastery of new technique In this connection the Third Five Year Plan provided for an increase of 50 to 100 per cent in national consumption

An honourable part in the accomplishment of this task has been assigned to the food industry which is called upon to satisfy the demand of the working people of the land of

Socialism for wholesome and high grade food products

ALL-ROUND COTRIBUTION TO INDUSTRIALISATION AND GENERAL UPLIFT

PART IV

## CULTURAL REVOLUTION

#### THE NEW SOVIET INTELLIGENTS(A

Bτ

## JOSEPII STALIN

The steady progress of industry and agriculture could not but lead, and has actually led, to a new rise in the material and cultural standard of the people

The abolition of exploitation and the consolidation of the Socialist economic system, the absence of unem employment with its attendant poverty, in town and country, the enormous expansion of industry and the steady growth in the number of workers, the increase in the productivity of labour of the workers and collective farmers, the securement of the land to the collective farms in per petuity and the vast number of first-class tractors and agricultural machines supplied to the collective farms-all this has created effective conditions for a further rise in the standard of living of the workers and peasants. In its turn, the improvement in the standard of living of the workers and peasants has naturally led to an improvement in the standard of living of the intelligentsia, who represent a considerable force in our country and serve the interests of the workers and the peasants

Now it is no longer a question of finding room in industry unemployed and homeless peasants who have been set admit from their villages and live in fear of starvation—of giving them jobs out of charity. The time has long gone by when there were such peasants in our country. And this is a good thing, of course, for it testifies to the prosperity of our countrywide. If anything, it is now a question of asking the collective farms to comply with our request and to release, say, one and a half miltion young collective farmers annually for the needs of our expanding industry.

The collective farms, which have already become properous, should bear in mind that if we do not get this assistance from them it will be very difficult to continue the expansion of our industry, and that if we do not expand our industry we null not be able to satisfy the persants' growing demand for consumers' goods. The collective farms are quito able to meet this request of ours, since the abundance of machinery in the collective farms releases a portion of the rural workers, who, if transferred to industry, could be of immense service to our whole national economy.

As a result, we have the following indications of the improvement in the standard of living of the workers and peasants during the period under review

#### TELL-TALE FIGURES

- 1 The national income rose from 13,500,000,000 roubles in 1933 to 105,000,000,000 roubles in 1933:
  - The number of workers and other employees rose from a little over 22,000,000 in 1933 to 23,000,000 in 1933;

- 3 The total annual payroll of workers and other employees rose from 34.953 000,000 roubles to 96,425,000 000 roubles,
- 4 The average annual wages of industrial workers," which amounted to 1,513 roubles in 1933, rose to 3,447 roubles in 1933.
- 5 The total monetary incomes of the collective farms rose from 5,661,900,000 roubles in 1933 to 14,180,100,000 roubles in 1937.
- 6. The average amount of grain received per collective farm household in the grain growing regions rose from 10 poods in 1937, exclusive of geod, emergency seed stocks fodder for the collectively ouned cattle, grain deliveries and payments in kind for work performed by the machine and tractor stations.
- 7 State budget appropriations for social and cultural serisces rose from 5,839,900,000 roubles in 1933 to 35,202,500,000 roubles in 1933

As regards the cultural standard of the people, its rise was commensurate with the rise in the standard of living-

From the standpoint of the cultural development of the people, the period under review has been marked by a veritable cultural revolution. The introduction of universal compulsory elementary education in the languages of the ractious nations of the USSR, an increasing number of schools and scholars of all grades, an increasing number of college trained experts, and the creation and growth of a new intelligentist, a Soviet intelligentist—such is the general picture of the cultural advancement of our people

(1) 1	use ii	N THE CU	LTURAL	LEVEL C	F THE	PEOPLE
Н	ere are	the figu	res			
A umbe	rofn	ipils and	Bant of measure meat thousands	1933 34	1938 39	Increas
		ll grades	tio diagras	23814	33 963 4	1426%
	Of wh	ıch				
		schools schools	•	178,35	21 288 4	1191%
		special)	•	4822	12000	220 3%
ınstıt	utions	ducational		4583	601 o	131 1%
gage	d in all	fuons en forms of USSR		-	47 442 1	-
*umbe	r of pul	the fibra		40.1	700	1737%
Numbe	r of	books in		-	, -	1
publi	c librar	ies	millions	86 0	1266	147 200
Numbe	r of cla	abs	thousands	6t z	ک.دو	1565%
\ umle	r of	theatres	wats	587	790	13466
taliat				27.46-	30,461	1109%

408 15 202 31 times

F-10 18901 1087%

660 278 times

4,9846 7,0924

21

With sound equipment

Number of cinema ins tallation 4 (excluding a narrow flm) in rural districts

Of which With sound equipment

Annual newspaper for chilata as

## (2) NUMBER OF SCHOOLS BUILT IN THE USSR

	111 47	111 1303 30		
	In towns and hamlets	in rural localities	Total	
1933	326	3 261	3,587	
1934	577	3,488	4,065	
1935	533	2 829	3,362	
1936	1,50a	4,206	5,711	
1937	730	1,323	2,053	
1938	583	1,246	1.829	
Total (19	33 38) 4 254	16,353	20 607	
	NG SPECIALISTS G UCATIONAL INSTI			

1938 583	1	1,246			1.8	29
Total (1933 38) 4 254	1	16,35	3		20 6	07
(3) YOUNG SPECIALISTS G EDUCATIONAL INSTI						HER
(In the	usands	)				
	1933	1934	1935	1936	1937	1938
Total for USSR (exclusive of miniary specialists)	346	49 2	837	976	1048	1067
t Engineers for industry and building	6 t	149	<b>-</b> 96	29.2	27 6	202
2 Engineers for transport and communications	18	40	76	66	70	61
3 Agricultural engineers agron omists veterinarians and zoo technicians	48	63	8.8	10.4	11 3	106
4 Economists and jurists		23				
5 Teachers of intermediale schools workers faculties technical schools and other educational workers includ						
ing art workers	20 2	79	12 2	216	317	357
6 Physicians pharmacists and physical culture instructors	46	25	73	92	123	13.6
7 Other specialities	43	at t	127	142	9.0	9.8

#### NEW SOVIET INTELLIGENTSIA

As a result of this immense cultural work a numerous new, Soviet intelligentia has arisen in our country and intelligentia which has emerged from the ranks of the norking class, peasantry and Soviet employees, which is of the flesh and blood of our people, which has never known the yoke of exploitation, which hates exploiters, and which is ready to serve the peoples of the USSR faithfully and decorable.

I think that the rise of this new Socialist intelligentsia of the people is one of the most important results of the cultural resolution in our country

> (Extracts of the speech delivered to the 18th Congress of the CPSU)

# END OF OPPRESSION NATIONAL QUESTION SOLVED

Rv

#### CHIMNAZ ASLANOVA

Several Nationalities, 2. Sowing discord, 3 End
 of oppression 4 Declaration of Rights, 5 Shook the
 world 6 Economic change, 7 When women had no
 rights, 8 Education, 9 Equality

1 The USSR is a country of many nationalities list-ast territory stretcing from the Arctic tundras to the subtropics is inhabited by scores of different peoples. Rusains Ukrainmans Bjelorussians Ukrainmans Euckneisens Vakets Duryats Tajiks Jews Poles Vente Ossettans Lezghins Greeks Tatars Kalimjás Chukchi Yukashira Aleuts and numerous others.

Want and destitution was the lot of these nationalities in the past. Theirs was a life of endless misery left in the wake of frequent bloody tragednes which took their toll of thousands—and sometimes milhons—of human lives. Lenn called Tsarit Russin a prizon of nations.

Prior to the Great October Socialist Revolution only the considered the indigenous population of the country. All other nationalistics were termed afters. But even of the Russians only a small minority enjoyed a privileged jostition. The over-thelming majority of the Russian people

becoming obliterated more and more, as is also the line between these classes and the intelligentsia, who is engaged in mental labor for the benefit of Soviet society."

The Third Five Year Pfan (1938-42) laid the foundations for the completion of light industries and for the organization of transport communication and defence of the country against internal cryss and external aggression

The Soviet Union consists of eleven constitutent Soviet Consists Republics, Russia, steeff a federation, the Ukraine, Byelorussia, Azerbadyan, Armenia, Georgia, Turkmenia, the Uzbek SSR, the Tadjik SSR, the Kazakh SSR and Kirghina. Most of three Union Republics include numerous autonomous units—autonomous republics, districts and regions of the many peoples of the Soviet Union. The Republics have equal rights Each constituent Republics is free to secede from the Union. Alf activities are conducted in the native language of a Republic

Racial and national hostility have been abolished in th USSR The law severely punishes anyone guilty of fomenting racial animosity or descrimination

Within the socialist framework of the Soviet Union, each national group has every facility for developing its own culture. Following the policy outlined by Joseph Stalin more than two decades ago, the USSR first given full oppor

- for the economic social and cultural development of the nationalties of the Union. The cultures of the various less are, in Stalin's phrase, 'national in form, socialist content."
  - 4 The word soviet means council It appears in the of the USSR and the various Republics because the 'unit on which the country is based is the soviet, or

Article 125 of the Constitution by placing at the disposal of all the workers (industrial, office and professional) and all the farmers and their organizations printing presses, supplies of paper, public buildings, the streets the means of communication and other material requisites for the exercise of these rights

The Soviet Union has introduced and developed many new democratic forms. Democraes in the USSR begins at the points of immediate concern to the citizen-where he works through shop meetings and wall newspapers, where he lives through tenants meetings at the children's camps and school where parents assist in the activities, in eco nomic management and policy through workers' discussions of economic plans in the expansion of production and the improvement of quality through the Stakhanovite movement and production conferences on the kolhozes (collective farms) where the kolhozniki plan their activities and choose the farm management themselves in the distribution of goods through the consumers to operatives in civic affairs, through workers' brigades which inspect stores, schools, restaurants and housing in the administration of the huge social insurance funds through the trade unions, in culture and art through the numerous cultural organizations groups and clubs in the factories and on the kolhozes in political life through meetings and elections which range from local administrative bodies to the Supreme Soviet of the USSR-Soviet citizens exert direct influence on public affairs through access to new-paper columns, through regular worker and peasant correspondents and through communications to editors and public officials

All these democratic forms are implemented. Decisions of parents tenants workers and farmers' meetings are carried into effect.





metric ton (2 200 fbs.) in 1933, to over 2.3 metric tons in 1937, exclusive of seed, emergency seed stocks, fodder for the collectively owned cattle, grain delivenes and payments in kind for work performed by the machine and tractor stations. In addition, the kollozinki had the produce of their personally owned cattle and plots of land. The 12,000 000 kolhoz households are prosperous and culturally advanced. For them as for the workers, hunger, poverty and uprorance are ended forever.

6 Tairit Russia imported most of its machinery from abroad It had no automobile or aviation industry, it manufactured no tractors or harvester combines. Today the Soviet Union's industrial output is over nine times as great as that of Tsarist Russia. It ranks first in Europe, and section in the world in the gross output of industry. Soviet Industrial output in large scale industry was valued at 100,375 000,000 tubles in 1930 compared with 11 billion rubles in 1930.

Industrial transformation has touched every product, every aspect of life—local and oil, efectric power and railways, water transportation and airways, clothes and radio, city and villace

Entire new industries have been created, among them being non ferrous metallurgy synthetic rubber production, chemicals automobiles tractors, harvester combines, aviation, precision instruments and machine building. Vast new industrial centres have been established throughout the country, such as Magnitogorik in the Urals, Kuzbas in Siberia, the chemical industry on the Kola pennisula, Stalingorik near Moscow, the copper amelting plants on the abores of Lake Balikhads etc.

7 The USSR is an economically independent industrial power Socialist industry accounts for 99 7 per cent of the total and ustrial output , private industry for only 0.03 per cent.

From 1933 to 1938, the national meetre of the USSR zore from 42,500 000,000 rubles to 105,000 000,000 rubles to annual pay roll from 34,953,000,000 rubles to 26,425,000,000 rubles, the average annual wage of industral workers from 1,513 to 3,447 rubles. At the same time there has been a proportionate morease in the defence capacity of the Sowiet Union, cassuring its power to repel any foreign aggressor and to contribute effectively to international peace

The workers employed in these industries, as all employed persons in the Soviet Union, are protected in their conditions of work by the most thorough going labor code in the world. The powerful Soviet trade unions, in which 23,000 000 industrial, professional and office workers are organized, administer social insurance finds and see to it that the elaborate system of labor protection, safety devices and general healthful conditions of work are rigidly observed. The unions exert a tremendous influence in raising labor productivity. Through them the workers realize their social and cultural needs, and exert democratic control over their own conditions of hie and labor. The initiative of the workers has found expression in the Stakharov movement which, by improved methods of work, devised by the workers themselves, has greatly raised labor Productivity and workers' incomes

a Tearst Russia was notorious for its poor housing, wretched streets. The Soviet Umon has built 230 new cities around various industrial enterprises and reconstructed its old cities. Some of the new cities are Zaporozhye, built around the hydroelectric station on the integer River in the Urraine, Kirrowsk beingt the Artes Circle, the modern town around the automobile tolena. Gorty Monchegorsk, built

around the gigantic copper smelling plant on the pennisulain the midst of the Siberian forests has arisen Normombik built by young men and nomen who chose to participate in this great pioneering adventure. In the Arctic Circle is the new port town of Igarka at the mouth of the Yenises River

In the Soviet Union care of the child begins before its birth Expectant mothers are granted leave from work. With full pay for living five days before and twenty eight days after childbirth and complete medical care before during and after childbirth They enjoy the facilities of rest homes and sandorns without charge During the hours when a Soviet mother is working or studying the child may be kept in a day nutsery or kindercarten.

In 1937 a total of 1 200 000 children were accommodated in permanent nursenes and kindergariens and 5 00 000 in seasonal ones. In bright spaceous rooms the children have their own I tile white beds tables and chairs. Experienced attendants carefully dress and undress the youngaters feed-them play with them, take them out of doors put them to bed. When the woraing day is over the mother comes for her child. Nurses and doctors in charge explain how to continue the proper care of the child at home. These pre-chool institutions tra in mothers as well as children.

Those who keep children entirely at home may obtain help and advice from Consultation Clinics on the care of children

The health of Societ children is guarded by a large army of scientists in scores of Government institutes and laboratories

In 1937 the Covernment spent more than 4 000 000 000 unites in taking care of the health of mothers and children

As a result of such care, inlant mortality has dropped 50 per cent from the pre war level

At the age of eight the child who has already received training in nurseries and kindergartens starts school

Before the Revolution, only 7,800,000, or one fourth of Russia's children, attended school The Soviet Union has universal compulsory, elementary education Now about thirty four million children attend school Between 1933 and 1938 over 20,000 schools were built, 4,251 in urban and 16 353 an rural localities Millions of copies of children's books have been assued in many languages of the USSR

Talented children are carefully nurtured, gifted young Poets, musicians and inventors are given every opportunity to develop their natural endowments in school and in special institutes and organizations

In addition, children have their own club houses and organizations Children's special publishing houses issue books for childen , special children's film companies produce films for children special children's theatres produce plays for children Soviet children have a whole world of their own which merges organically into the world of maturity

This far reaching system of child care has been one of the great single factors in releasing women from household drudgery and from constant fear for the safety and well being of their children. It has made it possible for women to participate fully in all the manifold, exciting activities of the new socialist society. No doors are closed to Soviet women This integral participation by the whole f community life, coupled with freedom from

has enriched home life, and made the family a and harmonious pnit.

#### GREAT ECONOMIC POWER

BY

#### E VARGA

1 Largest area 2 Rapid growth of population 3 Fertile soil 4 Grain 5 Vernalization. 6 Up-todate industry 7 Labour productivity 8 Rivers 9 No debts

A yest territory mexhaustible natural resources and a numerous and fastly increasing population form the natural basis for the rapid progress of the Soviet Union

The Tsarist Government proved unable to develop the productive forces of the country. In spite of immene natural wealth Russia was an agricultural country with a backward industry. The people were poor and uneducated. Veally three quarters of the population were unable to read or write.

It was only when civil was and foreign intervention had nded that the Soviet Umon was in a position to begin utilizing he natural resources of the country. Engineen years of peace have been enough for the attainment of immense economic urceries

1 The Societ Union is the largest country in the world has an area of 8,220 000 square miles. The United States including Alaska and other possessions) has an area of 145 000 square miles. Ama 4.092 000 square miles, and

Brazil 3,282,000 square miles

Except for some islands in the Arctic, this huge territory compries one unbroken mass of land. It stretches in a broad belt along the northern half of Europe and Asia, from Finland in the West to the Japan Sea and the Pacific Ocean in the East. In the North East, by way of the Bering Straits, the Soviet Union forders on Alaska. From North to South, the USSR stretches from the North Pole deep into the heart of Axia.

2 The Soviet Union has a population of 170,467,186, only less than China and India The growth of population is unusually rapid Since 1920, the population of the USSR has increased by 35,900,000, and since the census of 1926 it has increased by 23,139,217.

Despite this rapid growth of population there is no danger of so called "over population" in the USSR There are no "surplus" or "redundant" workers, pessants or intelectuals On the contrary, unemployment is entirely infinous in the country and there is a tremendous demand for people of every kind of profession in all branches of economic and cultural activity

The natural resources of the Soviet Union are immense it has extremely nich deposits of nunerals of all kinds, the feelogical investigation of which is being conducted with great energy. The known geological reserves of oil today amount to 8,700 000 000 tons (in Tsarist times they were estimated at 280,000,000 to 900,000,000 tons).

The oil reserves of the USSR exceed those of all other countries of the world combined

The known coal reserves have increased in the last twenty years from 230,000,000,000 tons to 1,651,000,000,000

tons The coal reserves of the USSR are second only to those of the USA

The USSR has the largest water power resources in

The USSR has the largest water power resources in the world, and the largest deposits of minerals suitable for fertilizers, and of manganese and ferrous ares

The deposits of high grade ferrous ores (uith an iron content of about 62 per cent) are estimated at 10,600,000,000 tons. This does not include the hinge deposits (estimated at 250 000,000,000 tons) of the poorer ferrous ores of the famous Kursk Magnetic Anomaly.

The Societ Union is rich in non ferrous metals such as copper, zinc and lead, and rare metals, it has also vast denosits of gold

The USSR has the largest timber resources in the world Thirty aght per cent of its surface is covered by forest From the Funnish border along the northern part of the USSR, in Europe and Siberia, there stretches a visit forest sone about 600 miles wide. Here there are still millions of square miles of wirgin timber which have never been touched by the hand of man. The forests of Siberian consider constitute the last unportant source of supply for the world's power industry.

3 In respect to fertility and suitability for agricultural oses, the soil of the Soviet Union is unsurpassed Of a 1 arable area of about 1,637,400,000 acres, only about ,450,000 acres have as yet been brought under cultivation, 'uding 247,000,000 acres made receized crops The following table, based on statistics compiled by the International

Institute in Rome for 1935 36, shows the relative areas and output of the Societ Union and other countries.

27

Grain Area (acres)

	Wheat	Rze	Barles	Oats
USSR. Other countries of which	96 330 000 249 4 0000		22 230 000 71 630 000	44 460 000 101 270 000
USA	59 280 200	2 4"( 00	7 4*0 000	<b>34</b> 580 con
	Grain Output	(millions of	tons)	
	If I and	D <sub>1</sub> a	Bartes	0-4-

	it i cat	nse	paries	Cars
USSR	31	21	9	18
Otler countries	97	25	34	49
of theh USA	17	1	6	17

It is clear from these figures that the Sowiet Union holds the leading place in the world's production of grain. It occounts for about one quarter of the world's output of wheat, nearly one half of the output of rye and over one quarter of the output of oats. In recent years agriculture in the Sowiet Union has made considerable progress, and the above figures have been greatly exceeded.

Before the war there were about 20 000,000 peasant fames on the present territory of the Soviet Union They cultivated the soil with the most primitive implements A cross taken in 1910 showed that the peasants had ten million wooden ploughs and 17,700,000 wooden narrows Thanks to collectivization the situation has radically changed in the past ten years. The peasant's house, household garden and orchard, cow, pigs and poultry used for the requirements of his family, constitute his "family farm" and contint exemuta his personal property. The land, form crimian his personal property. The land, form of the large scale farm run on collective modern agricultural machinery. Data ', 10°

foremost industrial countries. Its output is now the largest in Europe and the second largest in the world, yielding place only to that of the United States. However, as regards industrial output per head of population, the Soviet Union still lags behind a number of the leading capitalist countries. In its Third Five Year Plan (1933 42), the USSR was tackling the task of making good thus lag.

7 The Soviet Umon has unmense achievements to record in the sphere of productivity of labour During the period of the Second Five Year Plan alone (1933-37), productivity of labour in large scale industry increased by 62 per cent (as against a planned increase of 63 per cent for this period), the increase in the fullding industry was 83 per cent

In the days when economic disruption was at its height, Lenin set before the Soviet country the aim of overtaking and outstripping the technically and economically advanced capit alist countries Today we see this bold aim being realized floating routes in operation is increasing from year to year, their total length amounting to 83,000 miles in 1938 as compared with 47,000 miles in 1913. Canal construction is making it possible to create a connected system of waterways covering the whole country. The canals now under construction will interconnect the Black Sea, the Sea of Azov, the Caspian Sea, the Balte Sea and the Arctic Ocean.

The vast territory of the Soviet Union necessitated the utmost development of aviation

The rapid industrial growth of the Soviet Union has emanciated it from foreign dependence to which Tsansit Russia was subject. This was essential not only from the economic standpoint, but also to render the country capable of defending stell from the frankly aggressive intentions of certain neighbouring States. The Red Army is being supplied by Soviet industry with all its requirements. Had it not created its own heavy industry—the manufacture of mechinery, chemicals, etc.—the Soviet Union would have been defenceless in face of the threatened attacks of its enemy

However, the USSR has made itself independent of foreign countries but without any idea of economic self-sufficiency or of deliberately curtaining its foreign trade. On the contrary, next few years would have witnessed a growth in its foreign trade had it not been for the outbreak of the war

It is worth noting in this connection that the Societ Union has no Jovega debt. It always meets its current obligations with the utmost punctuality, in sharp contrast to most capitalist countries, which during the crisis of 1929 33 suspended symment on their foreign loans. The 'tge and rapidly growing sold industry of the Societ Union enables it to increase its imports without having recourse to joreign borrowings

The factors which have promoted the USSR to a foremost place among the economic powers of the world, second only to the USA, are its vast natural resources, the rapid increase of its population and cultural development, and its social system, which precludes the possibility of economic cuses and under which any increase in production benefits all citizens. There is no obstacle to the further progress of the Soviet Union except the meaze of foreign attack.

Place of the USSD in World Production

	In the world In Europa			
		1937	1913	1937
Gross industrial				_
output .	5th	and	øth	1st
Machine building	4th	2nd	3rd	1st
Agricultural ma-	****		<b>0</b>	
chine building	5th	tst	ard	ist
Tractors* .	_	2nd	-	Ist
Harvester cam-				
bines*	_	ıst		Ist
omobiles and				
trucks*		6th		4111
Of which trucks*	-	2nd	_	1 st
' ectricity	toth	3rd	7th	2nd
Coal	6th	4th	sth	3rd
Tron Ore	sth	and	ath	Ist
⊃teel .	5th	3rd	4th	and.
P 4 copper	7th	5th	3rd	1st
Atummum*	_	3rd		2nd
Gold	4th	2nd	rst	ist
Superphosphates	16th	3rd	13th	ıst
Beet sugar	2nd	ıst	znd	Ist

<sup>\*</sup> Note The industries manufacturing tractors harrester combines,

### NATIONAL INCOME

#### BY

#### I SAUTIN

I In Tsarist time 2 Nine-fold improvement 3 Socialist enterprises 4 Short working hours 5 Increase in output 6 A comparison 7 Welfare of workers

The national income of a country is one of the most graphic and comprehensive indices of its economic development. Its size and movement are an epitome of the development of the various branches of the country seconomic activity a property of the various branches of the country seconomic activity are distribution of the national income is a reflection of the focula structure of the country

- I In old Russia the Russia of the Tsars capitalists and landlords the national moone could be called national only because it was created by the exploited working folk of the lation. The greater part of the national income went into the pockets of a small fraction of the population.
- In Tsarist times mine tenths of the population of Russia owned little or no property. After paying taxes and other imposts to the State and landlords this part of the Population received no more than 20 or 30 per cent of the national income. The rest passed into the pockets of the Propertied classes—the landlords capitalists and kulaks (rich peasants), who constituted an insignificant proportion of the Population.

The unrestricted exploitation of the workers and peasants, whose labour created the vact uncomes of the capitalists, land lords and Tearrit officials depressed the uncome of the working population to a level which could scarcely provide minimum human requirements

Judged by the nestronal income, total and per capita, issarist Russia was one of the poorest and most backward countries in the world. The national income per head of population was three times as large in Germany, three and a half times in France, and four and a half times in Great Britain

But as a result of the Socialist Revolution, Russia, so beared economically and technically in Tearric times, has now become a foremost industrial power. During the period of the first two Five Year Plans (1928 37), industry became the most advanced branch of the national economy of the USSR and was sequenced with the most up to date machinery.

The output of Socialist industry in 1938 was over inne times the industrial output of pre war Russia. In respect to gross industrial output, the Soviet Union has in recent years advanced to first place in Europe and second idace in the world.

The industrial structure of the Soviet Union has been thoroughly renerred over 30 per cent of the industrial output in 1937 was obtained from plants either newly built or completely reconstructed in the period of the First and Second in Year Plans.

Socialist industry has enabled the peasants, with the assistance of the Soviet Government, to completely reconstruct the agriculture of the country. The twenty million small individual farms have now been replaced by large socialist.

farms, the hollhozes, or collective farms, equipped with the most up to date machinery. The primitive wooden ploughs and harrows which constituted the principal instruments of againature in Tsurist times have now disappeared.

3 In 1937, 991 per cent of the national income of the U.S.S.B. was already being derived from Socialist entirprises. They recounted for 993 per cent of the total industrial output, 936 per cent of the total agricultural output (including the personal auxiliary husbanday of the collective farmers), and 100 per cent of the country is trade.

The abolition of the exploiting classes in the USSR by putting an end to the parasitic consumption of a large part of the national income troughly one half in Fearist times) has set free large resources for the expansion of industry and for the improvement of the material and cultural conditions of the working population. In addition the Socialist conomic system being based on planning makes it possible to organize production on rational lines and to eliminate the huge waste incident to capitalist competition. But planning became possible only rifer private ownership of the means and implements of production had been abolished, and only after the economic life of the country had been rid of the anarchy of capitalist production caffed forth by the conflicting interests of capitalist grown.

The Socialist economic system has created every requisite for planning and for the steady and rapid economic progress of the country based upon the eviensive application of science and itchnology. The supply of modern machinery to industry and agriculture has resulted in a tremendous rise in the prodictivity of labour. During the period of the Second Five Year Plan, productiny of labour in large scale industry increased achieve -uccess in science and technology are held in high respect and esteem by the country, they receive material newards and honours and distinctions from Government

The growth of the national income of the USSR is compared with 1913, may be seen from the table below

National Income of the USSR

Year	In billions of rubles (m	Per cent of	Per cent
	1926 27 prices)	1913	1917
1913	21 0	1000	_
1 17	160	762	0.001
10_8	2,0	1191	1563
1032	450	2143	281 2
J3	r63	4586	6019
1 38	, 10,0	2000	6563

5 In 1938 the national income of the U.S.R. was five times as large as it was in 1913 and six and a half times as large as in 1917, the last year of the capitalist system in Russia. In the period 1990 13, the national income of Russia uncreased by only 39 per cent, an annual increase of about 3 per cent. No small part of this increase was due to foreign loans and to foreign mestinents generally.

In the toremost copitalist countries the rate of increase of the national meome has fluctuated from 3 per cent to 8 per secuti per anium at different periods. In the USSR we observe a steady increase in the national moome during the past ten voits exceeding 16 per cent annually.

And it should be remembered that the Soviet Union achieved its unusually high rate of economic progress entirely

on its own internal resources without the aid of foreign loans or foreign investments of any kind

Over 99 per cent of the national income of the USSR. in 1937 was obtained from Socialist enterprise (State cooperative and collective farms) and only one per cent from the pr vate enterprise of individual peasants and handicraftsmen In the USSR as its Constitution lays down the land its natural deposits waters forests mills factories mines rail water and air transport banks post telegraph and telephones large State organized agricultural enterprises as well as muni cinal enterprises and the bulk of the dwell ng houses in cities and industrial localities are State property that is to say they b long to the whole people All these enterprises are adm n ist red by State bodies in accordance with a scientifically v orked out plan. The product and profits of these enterprises do not pass into the pockets of private persons but into the coffers of the State which uses them for economic development and for the improvement of the living conditions of the population For this reason periods of crisis when self organized mills and factories are forced to work part time or come to a standstifl aftogether are unknown and imposs ble in the USSR

The Socialist ownership of the means and implementsproduction the absence of competition the impossibility or es due to overproduction and the system of economic Linning have created an exercepanding field for labour and il for the steady enlistment of all the labour forces of the

All this was of course impossible to Russia in the days the landlords and capitalists. In those days the vast ural resources of the country largely remained unutilized and during industrial booms the number of unemployed.

workers in the towns was never less than a million Agrarian over population reached enormous proportions Tens of millions of peasants, nearly two thirds of the rural population, did not possess enough land and implements to sustain a mini mum standard of life Before the Revolution, 65 per cent of the peasant households consisted of poor peasants, 20 per cent of middle class peasants and 15 per cent of rich peasants (kulaks) Thirty per cent of the peasant households were without horses 34 per cent without implements, and 15 per cent without land to cultivate. The best, most fertile land belonged to the landlords and kulaks. Of a total arable area of 907,000,000 acres, the royal family, the landlords and the monasteries owned 377,000,000 acres and the kulaks over 197,000,000 acres The Great Socialist Revolution, by abolishing private ownership of the land and means of production, emncipated the working people of the town and country from exploitation and eliminated poverty from the country

In the Soviet Union the national income is entirely at the disposal of the working people and their State It is used for the expansion of industry, for strengthening the defensive power of the country and for raising the general standard of Iving and culture

6 The Constitution of the USSR guarantees the right to work, rest and lessure, education, and maintenance during sickness, incapacitation and old age. The cost of education, students stipends, public health (hospitals, rest homes and sanatoria), sick benefits, maternity benefits, grants to large families, and old age pensions are borne by the State, the factories or the trade unions. There is no indirect taxation in the Soviet Union. Old age and other pensioners, as well as norders in the lower paid categories, pay reduced reuts.

The national income of the USSR is distributed in accordance with the Socialist principle. From each according to his ability to each according to his work. The labour of every citizen is renumerated directly in accordance with its runnity and quality.

All persons employed in the State owned industries and offices are paid according to their output. The scales of pay ment for output are fixed by the State in conjunction with the trade unions in accordance with the skill and qualification of the worker. Wages are fully guaranteed irrespective of whether the given undertaking is working at a profit or loss

In a collective farm the revenue is divided among the

members in proportion to the number of work day units and credited to them in the course of the year. The collective farmer is credited with a work-day unit for the performance of a definite quantity of work requiring average skill. If in any day he performs more than the fixed quantity of york or performs work requiring higher skill he is credited with more than one work day unit. Thus in one day of work a whive farmer may receive credit for everal work day ts The bigger the resenue of the collective farm the er the amount of money and produce that falls to the of each work day unit credited. In add tio 1 the collective ers have their own personal auxiliary hu bandries (house ld garden and orchard cons pigs goats etc the produce om which, like the produce they receive as their share of the enue of their collective farm for the number of standard ork day units credited to them is their own to consume or to as they please. The whole revenue of the collective farm in , and produce is divided among its members in the mer described with the exception of a small tax payable to the State, a certain percentage of the revenue which gots into the indivisible fund of the collective farm and is used for the building of clubs, storehouses, cattle barns and other farm. buildings and for the purchase of machinery and implements, and another percentage which is used for the common requirements of the collective farm and for the maintenance of supergamulated collective farmers, for sick benefits and mater unty benefits

Thus the growth of the national income of the USSR is equivalent to a growth of the incomes of the working population. In 1937, as compared with 1932, the average wage of workers and other employees in all branches increased by 1135 per cent, the total payroll of the country by 151 per cent, and the payroll of large-scale industry by 179 per cent,

The steady growth of meomes is accompanied by a strady increase in the consumption of goods and produce As compared with 1932, the consumption of butter in 1937 had increased by nearly 150 per cent, poil, by 250 per cent, sausage by nearly 300 per cent, white bread by nearly 200 per cent, and fruit by nearly 300 per cent and in this respect, the country-side does not lag behind the towns In 1937 each collective farm household received on an average 175 toms of grain, as compared with 0 3 ton in 1932.

The total monetary mesome of the collective farms amounted to 4,568,000,000 rubles in 1932, and to 11,211,000,000 rubles in 1937 Compared with 1933, the per capita consumption of sugar by the rural population in 1937 had mereaved nearly six and a half times, confectionery more than three times, and fats more than twice. The consumption of nourishing foods is continuing to grow. In the first half of 1933, as compared with the corresponding period in the

previous year the per capita consumption of butter by conlective farmers increased by 32 per cent and sugar by 17 per cent

The rise in the standard of living is accompanied by a samilar rise in the standard of education and culture. For example only 6 117 000 children or one-fifth of the rural child population of school going age, attended schools in Tsaris Russia in 1914. Today in the U.S.R. education is universal in 1937 20 300 000 children attended rural schools. In the period of the Second Five Year Plan alone, the number of children attending elementary and high schools in the U.S.R. rose from 21 300 000 to 29 400 000.

The Third Five Year Plan (1933-42) was a plan for the gradual transition from Socialism to Communism. It provided for an increase in the national income by 80 per cent as compared with 1937. We already found that the national income was steadily trising in the period of the Third Five Year Plan and the standard of living of the working population rose correspondingly.

In the USSR untile the capitalist countries the national income is really the income of the nation for its entirely at the disposal of the people. Both the national wealth and it enational income of ive USSP are an index of the general standard of living and growing prosperts of the possibilation.

#### MINERAL WEALTH

EY

#### I M GUBKIN

I Great scientists 2 Geological Board 3 New discoveries 4 Power producing minerals 5 Ores

The Union of Soxiet Socialist Republics occupies an area of 8 22200 equate ridies covering a huge part of the Eura in continent From the geological standpoint its territory represents a rich complex of formations of highly varied structures and acc.

- 1 In pre revolutionary times useful minerals were studied in Russia by great scientists like Lomonovov and Karpinsky. The former is justly regarded as the founder of the science of geology in Russia the latter as the father of Soviet geology. The science reached its full amplitude of development since the establishment of the Soviet Government in the period of the three Five Year Plans.
- In Tsurist days the mining industry was concentrated at three or four points chiefly in the European part of the country. There were only a few small mining centres in the Asiatic part—in the Altai Mountains (non ferrous metals) and at Auzirets (coal). The mines as a rule belonged to foreign capitalists.

The Geological Service confined its activities chiefly to geological charting — it did practically nothing in the way of exploring and pro pecting for useful minerals — The number

of geologists was indiculously small, there being no special schools to train them.

The fact that the mineral resources of the country were almost entirely unknown created difficulties for the Soviet Government in the very earliest years. The rapid expansion of industry created an enormous demand for ores and fluxes. Mineral fettilizers were needed for agriculture. The chemical and other undistries were also clamourine for raw materials

As we know, the First Face Year Plan, despite the astiness of development work it emissaged was fulfilled in four years some of the most important branches of the mining industry—oil, for example—fulfilling their plans even in 2½ years. This was accomplished in the face of tremendous difficulties and obstacles, which, in the case of immerals, were still further complicated by the fact that they not only had to be discovered, but to be discovered and surveyed precisely in the places where they nece needed

In the past the concentration of industry in the European part of Russia was due to the colonial policy of the Tsantsi Government. The more remote regions of the country, occupied mainly by non Russian peoples, were looked upon by Government purely as reserves for the supply of Central Russia with agricultural produce. As a consequence, the vast mineral deposits of Suberia, Kazakhstan Central Avia and the Caucassas with the exception of oil in the case of the latter) not only remained unutilized, but were not even discovered and unidea.

About 90 per cent of the coal output of Russa in Tsanst times came from the Donetz Rasin, over 60 per cent of the iron ore from Krnoi Rog and 95 per cent of the oil output from the Baku fields This meant that oil had to be trans ported to Sibera and the Far East from Baku, a dystance of thousands of miles, and the position was very much similar in the case of coal and the products of the metallurgical industry

The tremendous developments planned by the Soviet Government demanded the rapid and systematic study of the productive forces of the country, including its immeral resources. This, in turn, demanded the development of geological exploration and survey on a very wide scale

The first task undertaken was the training of skilled forces for this work for which purpose a number of specialized medium and higher educational establishments were opened By the time the First Five Year Plan was inaugurated, thousands of geologists were already engaged in studying the mineral resources of the USSR Today the number of Soviet geologists can be counted in tens of thousands.

2 The second step taken by the Soviet Government in the realm of geological survey and research was to entrust all branches of the work to one body, the Geological Board The effect of this was to place geological survey and research on strictly planned and systematic lines, and to ensure the rational employment of men and materials and the rapid and fullest use of the results obtained.

Nowadays, the most up to date equipment is used in geological work in the USSR Originally it had to be

obtained from abroad, but it is now being produced at home. The abolition of private property in land has opened up unlimited possibilities for geological science in the USSR. In prerevolutionary days, the work of the geologist was hampered by the existence of private boundaries, an impediment which has now been entirely removed.

3 Since the establishment of the Soviet Government, many nunerals have been discovered with which were formerly

unknown in our country-among them apatites, potassium

The apartie deposits of the USSR are the largest in the world those of the kola Peninsula are estimated at 2 000 000 000 tons

The potassium salt deposits of Salilamsk are computed at 18 000 000 000 tons (in potassium oxide equivalent). The USSR possesses 27 700 000 000 tons of these salts, or 5 per cent of the world's known deposits.

An expedition of the Academy of Sciences has discoursed new rich deposits of potta-uum -alts in Western Karakhstan Their composition is such as to permit the extraction from them of potas-uum sulphate—an excellent fertilizer for cotion tobacco and other crops

In close proximity near Lake Inderrich deposits of borates the raw material of boron have been discovered

The voluntary study individual and collective of the natural resources and productive potential ties of the various regions of the country is very widespread in the USSR There are large numbers of local natural history societies and clubs as well as misurums national receives and so to Numerous deposits of weful immerals have been discovered by such voluntary organizations

Important contributions to the knowledge of the natural resources of the country have been made by individual analettes. The mme laboratory in the village of Bystrowka (Kirghuz Republic) for example has thousands of specimens of valuable metallise ores found and donated by collective farmers and trappers. Information furnished by a local pea ant by name. Viangalos has resulted in the discovery of five outcrops of lead and a bestop

We shall briefly relate what has been accomplished by the Coviet Union in the location of mineral deposits of accommic value

4 Oil In Tsust times the oil reserves of Russia were estimated at eight or nine hundred million tons. A computation made at the time of the International Geological Congress in 1937 placed the figure at 6,500,000 000 tons, the protein oil reserves being computed at 1,000,0000 tons.

In the course of 1937 and 1938, geological survey work in the Volga region and on the western slopes of the Urals began to yield results

There has been a considerable increase in the estimated oil the extension of the Azerbaijan Soviet Socialist Republic and other of the older oil bearing regions, as well as in the recently discovered oil bearing regions in the Bashkir, Dauchtesan and other Soviet Republics.

In 1938 the geological oil reserves of the USSR were estimated at 8,700,000 000 tons, the proven oil reserves exceeding 1,000,000,000 tons

There has been a marked change in the geographical disposition of the oil industry, which shows a distinct eastward movement. That considerable oil deposits will be discovered in the near future in Sheria is now beyond doubt.

The known oil reserves of the USSR at the present time considerably exceed the aggregate reserves of other countries

Coal The geological reserves of eaal in Russia were estimated in 1913 at 230,000,000,000 tons Computations made at the time of the International Geological Congress in 1937 fixed the coal reserves of the USSR at 1,651,000,000,000 tons

Thus, the I noun coal reserves of the USSR have increased sevenfold in tuenty years. They are sufficient to cover the country's requirements for several centuries

The discovery and mise tigation of new fields has resulted in a considerable change in the geographical disposition of the coal Indi try. In Tsarrst times, Russia a coal requirements were almost entirely supplied from the Donetz Basin. Today, in addition to this source the USSR derives a sub tantial part of its coal from the Urals. Kazakhstan, Siberta the Soriet Far East, Central Asia, the Moscon Region and other fields.

Soviet coals are of exceptionally high quality, only 20 per cent being brown coal, the rest hard coal

The coal reserves of the USSR are exceeded only by

Recent geological investigations farmish ground to expect the early discovery of new, rich coalfields, chiefly in the eastern part of the USSR, the Central Asiatic Republicand Asiakhetan

5 Iron The geological reserves of iron ore in the USSR are estimated today at 10 600,000 000 ton. as against 2 000 000,000 tons in 1913

In addition there are vast deposits of ferriferous quarterite (estimated at 250,000,000,000 toos) with an iron context averaging 35 per cent.

The proces of extration of iron from ferriferous quartate on industrial lines has been fully worked out, but owing to the abundant deposits of iron ore, ferriferous quartatie is regarded as a reserve source of supply



Chromite Chromite deposits were exurely unknown in Russia in Tsarist times. Deposits of chromite ore in the USSR today are estimated at over 16,000,000 tons

Manganese Manganese deposits were e timated in 1913 at 167 000,000 tons today geological investigations have raised the estimate to 750 000 000 tons The high quality of Soviet manganese is generally recognized.

Copper Copper deposits were estimated in 1915 at 62 700 tons (pure metal) the estimate today exceeds 19,500 000 tons

Aluminum No deposits of aluminum ore were known in Russia in Tsarist times The USSR today has a large aluminum industry, whose ore requirements are entirely home supplied The earth used is bauxite the estimated reserves of which exceeds 30,000 000 tons

In addition to bauxite the USSR possesses large deposits of other clays with a large alumina content (nepheline cyanite alumite) The process of extraction of aluminium from these earths has been worked out and will be applied on industrial lines

Chemicals In this field attention has been mainly devoted to mineral fertilizers which in Tsarist times Russia used to import

Apatue As already mentioned the apatite reserves of

the USSR are estimated at 2000 000 000 tons Potassium salts Deposits of potassium salts were un known in the USSR until 1929 The deposits discovered in that year in Solikamsk contain 18 000 000 000 tons of

oxide

The USSR has larger deposits of minerals suitable for fertilizer purposes than any other country in the world

In recent years rich deposits of boron—the only nuneral hitherto not found in commercial quantities—have been dis- / covered in the USSR.

Thanks to the broad scope on which geological research has been conducted it is now known that the territory of the USSR contains all the useful innerals in commercial quantities

Geology is held in high esteem by the Soviet Government as a science which can contribute largely to the welfare and prosperity of the population

In the USSR the land and its resources belong to the people and are completely at the disposal of the people. And all that is done in the field of geology the efforts both of the professional and amateur geologists have one purpose in view—to benefit the working people of the country and to further its industrial process.

# PEOPLES' ROLL IN ECONOMIC PLANNING

### BY I IOFFE

r Intricate mechanism. 2 Organization. 3 How plans are drawn up 4 90,000 rail road cars a year 5 Key problems. 6 Endorsement of the plan. 7 Honours. 8 Joint work 9 Capitalist countries and Russia

The Sovet is the only country in the world where crises and unemployment and anarchy of production are unknown, for it is the only country that is developing according to plan. The tremendous advantages accruing from planned acconomy are felt by every worker, collective farmer and intellectual in the course of the thousand and one little things that make no their extractary life.

Just consider the facts. In the eighteen years since the conclusion of the Civil War, there has not been a single year in which output has declined or has been stagnant. It is already mine years since unemployment was abolished once and for all. The right to work is guaranteed by the Soviet Constitution. And there is not another country in the world that has experienced such rapid cultural progress as the Sowiet Union proteins which embraces all parts of its wast territory.

A backward and poverty stricken country in the past, It has now become a mighty industrial power possessing a first class army with the most up to date enuipment.

1 The economy of any country is an exceedingly in tricate mechanism That of the Soviet Union includes thousands of factories and mills, 243,000 collective farms.

a vast transport system—railways, waterways motor transport and airways—hundreds of thousands of stores and shops and an extensive network of schools and other educational establi himents

Every Soviet factory collective farm university etc. fix choins according to a definite plan. This plan is given the effect of law and is binding on each and every plant, a d in titution. All the resources of the country are mobility to fulfil the plan adouted.

The plan of ever industrial establishment contains d finite figures stipulating the quantity and quality of its output for the coming year. The plan determines production to its the sale prices and marketing conditions of the product its the number of workers the office and technical staff it is to employ wages the standards of labour productivity, the expenditure quotas for east material, fuel, and other supplies and the standards of depreciation of machiners.

Every collective farm receives a plan which stipulates the acreage of various crops the agronomical measures it must apply the harvest yield for the various crops etc.

Every store has a plan fixing its volume of trade and the amount of overhead expenses

In the Soviet I mon as in a highly developed country, it various branches of economy are closely internoce and interdependent. This interdependence finds its reflection in the plans of the various branches of the national economy, which provides for such correlation in the development of the various branches of economic life as to secure the most rational and rapid progress of the country as a whole

The plan for the development of the national econom? of the USSR is a national programme which defines the work to be accomplished by tens of millions of people. This circum-tance means that highly important and introde demands are made of the plan and presupposes the exist 100 of such conditions as to ensure the possibility of carry  $m_c$  . It planned economy

- 2 In the Soviet Union the land industry, the bank and the transport system are State property, that is they belong to the whole people.
- All industrial establishments State farms starge Sowned agricultural establishments) trading enterprises schools universities, medical institutions and other economic or cultural institutions and establishments are under 'te privadiction of the various People's Commissariats

The work of the collective farms is governed by a special set of rules adopted separately by each collective farm on the basis of the Model Collective Farm Rules adopted by afthe Second All Union Congress of Collective Farm Stock workers and endorsed by Government In conformity with these rules the collective farms conduct their work according to plan and strictly adhere to the production plans fixed IV Government. This enables the State to plan a.r. [ turtal as well as industrial development

Thus, in the Soviet state all the material wealth of the current shologs to the people. Through its bodies the State directly supervises the entire life of the country, concentrating full power in its hands (endorsement of plans, appropriation of financial and material te-ources appointment of precedure etc.).

The drawing up of plans and supervision of their fulfil ment is one of the most important aspects of the work of the People's Commissariats. Planning is not the prerogative of any one organization, but a component, organic part of

the activities of the whole State and economic apparatus of the country

The highest organ of State authority of the USSR is the Supreme Soviet of the USSR. The highest executive and administrative organ of State authority of the Union of Socialist Republies is the Council of People's Commissar of the USSR which confirms the national economic plan and supervises its fulfilling.

Attached to the Council of People's Commissars of the USSR 12 the State Planning Commission with a staff of USSR 12 the State Planning Commission with a staff of People's Commissions function under the Council of People's Commissars of the various Republics Planning commissions have likewise been set up under the executive committee of Soviets of all territories, regions and districts of the USSR

The plans for the various industries are drawn up by the People's Commissariats, which maintain departments for this purpose Planning departments have been similarly set up in all factories mills and institutions

Thus there are no organizations in the USSR engaged in at tract planning. All State bodies have planning depart monts or commissions under them and this ensures unity of leader hip.

3 The method by which plans are drawn up may best be illustrated by the example of the annual plans for industry. Best drs annual plans however, it is also the practice in the USSR to draft quarterly plans, which, as part of the yearly.

USSR to draft quarterly plans, which, as part of the yearly
'an provide a concrete programme for the current three
months.

Work on drawing up the annual plans usually begins aix or seven months before the new year On the basis of data submitted by the People's Commissariats and the State Planning Commission Government sums up the results of plan fulfilment for the current year. In these summaries which are based on a profound and thorough analysis of the economic trends in the country Government rates the progress made in the fulfilment of the yearly plan and the Five Year plan as a whole. It establishes which branches of industry are lagging behind in plan fulfilment and the reasons for this which branches are successfully carrying out their plans and the means they employ to achieve this. This work furnishes a comprehensive picture of plan fulfilment throughout the country.

Besides summing up results Government determines the chief tasks that must be carried out in the next few years. These tasks are formulated in the Instructions for Drawing up Plans.

The general features of all economic plans are defined as follows in Article 11 of the Constitution of the USSR

The economic life of the USSR is determined and directed by the State national economic plan with the aim of increasing the public wealth of steadily improving the material conditions of the working people and running their cultural level of consolidating the independence of the USSR and streenthening its defensive canaciti."

All the elements of the plan are subordinated to the purposes of carrying out these aims

The profuminar programme fixed by Government gives due consideration to the close connections between various industries. Thus, the programme of increasing the production of pig iron requires a corresponding increase in the output of role and tono ore. The programme for increas

ing school attendance presuppuses a preliminary investigation as to how the additional school children will be provided with school buildings, teachers, textbooks, budgetary functional content of the properties of all planning bodies is to map out correct proportions for the development of the various branches of economy and culture

The Soviet Government bases its plans on a detailed calculation of potentialities

In working out the preliminary plan, the planning commissions and Government carefully ascertam the wishle natural resources, the extent to which they have been prospected and the possibilities of their industrial exploits into the existing production capacity and the extent to which newly built establishments are ready for operation, the amount of available labour, power, etc.

However existing production capacities cannot serve as the sole criterion in mapping out production programmes if Government is convinced that a drastic increase in the output of one branch of industry or another is necessary

A striking instance of this was the 1935 plan for the astruction of railroad cars. The production in 1913 was 1932. The 1935 plan was for 90,000 cars.

Other factories co operated in carrying out this task aid not present any particular difficulties, for the entire try of the country is the property of the whole people 4 is in the hands of the State As a result of all the vasures taken, 90,758 cars were built in 1935

This example illustrates the tremendous potentialities of he national economy when it is organised as one planned hole 5 In the m-tructions for drawing up the plan Government indicates the key problems for the period covered by the plan, it specifies the industries that will play a decisive part in fulfilling the plan and formulates their basic tasks

The determination of the key problems is a factor of great importance in drawing up plans, for the plan fulfil ment of all other branches of industry is regarded from the standpoint of the extent to which they ensure the fulfilment of the plan for the key industry.

The selection of one or another key problem for the period covered by the plan depends on the general e enomic and political tasks facing the country

Thus, for example, the chief ecotomic task confronting the country in the Second Five Year Plan period (1933 37) was the technical reconstruction of the Soviet national economy and the introduction of up to date machine technique in all branches of the national economy in use of this, the development of the machine building industry was singled out as the key problem of the plan. The plans for the development of the iron and seed industry and of the non-ferrous inetallurgy and the plans for capital construction were considered from the point of view of the extent to which they would ensure the development of the machine building industry.

During the Second Five Year Plan period the output of the machine building industry increased from 9 400 000 000 roubles in 1932 to 27 500,000,000 roubles in 1937

When the People's Commissariats receive the government in-tructions for drawing up their plans they proceed to determine the preliminary programmes of each of the industries under their jurisdiction. The Chief Administration of the given industry defines the plan for each establishment under its control

These preliminary plans are then discussed by both the management and the trade union, as well as other public organizations of the establishment At their production conferences the workers and employees discuss whether all potentialities for increased output, higher labour productivity and reduction in production costs have been taken into account. These conferences thoroughly analyse the experience of production brigades and of Stakhanovite workers who have attained a high degree of efficiency and make amend ments to the proposed plan based on the specific nature and rotential capacity of the spice establishment.

All these plans, with additions and amendments are then returned to the respective People's Commissariat, which, after due examination, draws up a single, uniform plan for the whole Commissariat and submits it to Government for approval. At the same time, on the basis of data furnished by the establishments and industries under its control, the People's Commissariat submits to Government an estimate of the amount of fuel, electric power, raw material, working apital and funds for capital missesment required for the fulfillment of its production procrammer.

6 All plans submitted to Government for endorsement are first of all studied by the State Planning Commission high submits its opinion on each of these plans

In formulating the final plan for the various People's Commissariats, Government takes into account the findings of the experts consulted and of the State Planning Commission. The plan adopted by Government becomes law

On the basis of the plan adopted by Government, the People's Commissariats establish the mandatory production programme for each of their establishments

The working people of the Soute Union not only take part in the discussion and drawing up of the plans but are also vitally interested in their fulfilment. The production programmes laid down by Government are the minimum of what must be accomplished. It is a matter of honor for the workers of ever factors to overfulfill their plan. Premiums are awarded to individual workers and factory managers who succeed in overfulfilling the plan.

7 The foremost people in industry agriculture, transport education art trade and other spheres of activity are accorded high honors and enjoy great popularity. Thousand's of them have been decorated by Government for their exemplary were

The Principal aim of planning in the Societ Union is to ensure the further development of the national economy to raise the cultural level of the country and improve the material conditions of the population

All tasks included in the plan are based on the maximum introduction of the latest achievements of science and technology on the most rational and comprehensive utilization of the country's natural resources and on making human labour easier and increasing its efficiency.

This cannot be accomplished without the active participation of the country's scientific forces in the work of planning and without the development of the country's scientific multiplicing.

A compenent part of the plan is the system of technical and economic indices which has been elaborated for all

hranches of the national economy. These indices prescribe the technological standards, the expenditure quotas for raw materials, fuel and supplies, the proper utilization of equipment, and the barie quality standards of goods produced

These indices are worked out on the basis of the experience of the foremost industrial establishments both in the USSR and in other countries and they aim at gradually zaising the whole of the national economy to ever higher technical standards

One of the most important aspects of planning is the study of the country's natural resources, their effective utilization and the proper distribution of the thousands of new establishments that are to be built.

Finally, it should be mentioned that a number of important economic problems requiring prompt solution arise in the process of planning. These problems deal with the establishment of definite proportions in the development of the various branches of industry, the correlation of prices, the working out of the economic basis for new construction work, etc.

d The staff of the State Planning Commission of the SSR includes prominent engineers, technical experts, ologists, physicists economists and specialists in other slds Besides, all the People's Commissariats, the various

ng organizations and the State Planning Commission of USSR matte the Academy of Seinces and other scientific rich institutions to collaborate in the work of drawing the plan. As a result of this joint work, the national once plans of the Soviet Union series as a powerful means aducing the achievements of series into all branches.

onomy and all spheres of cultural endeavour

Hundreds of scientific research institutions have been founded in the USSR and many of them have gained world wide repute. The work of Soviet mathematicians and geolo gists and the work of the Institute of Experimental Medicine, in particular, capor well earned fame. All scientific research institutions are financed by the State.

Drawing up the plan is only the first stage of the work of planning Execution is no less important. This depends primarily on the proper organization of the work of the unillions of people who have to fulfit these plans.

Government organizes constant control over plan fullment, thus essuring the timely carrying out of the plan But this control is not the function of State organs along The working people themselves take part in it. Figures on plan fulfilment in the key industries are published in the measuragers and are thus available to the general public

Government closely follows the course of fulfilment of the plan, directs the activities of all State and co-operative organizations and when necessary renders assistance to them

The instructions and assistance given by Government tre a tremendous mobilizing and organizing factor not only in respect to those industries or establishments for which they are intended but for the entire national economy. A few years ago the coal industric displaced a tendency to lag behind. Government and the Central Committee of the Commissist Parts called together the best inners for a conference in Noscow. The speeches of these rails and file workers received the rails of this lagging. On the basis of the fastual insternal supplied by this conference Government ordered that the system of wages should be resisted, and engineers and technicians should be assisted work.

directly in the pits. These measures soon brought results the coal output began to climb, increasing by 23 per cent in one year.

Besides assistance in the form of instructions, advice and the assignment of additional forces, Government, in the case of many factories allots additional funds and materials and extends the scope of capital construction

This day to day supervision and assistance is one of the most important and decisive factors of planning in the Soviet Union

The Societ Umon, the only country in the world where planned economy reigns supreme, is developing at a rate unparalleled by any other country in the world A comparison of the development of industry in the Soviet Union with that of the principal capitalist countries in the period from 1913 to 1938 shows that while in the capitalist countries industry is practically stagnant at preuar level, exceeding it at times by no more than 2030 per cent, the industry of the Souret Union has surpassed the pre uar level more than ninefold. While the world output of wheat has increased by 26 per cent since 1913, in the Societ Umon it has increased by 114 per cent The yield of cotton in the USSR increased by 242 per cent during this period while the increase in the world output was only 30 per cent the output of sugar beet in the Soviet Union doubled while the world output rose only by 26 per cent

The advantages of planned economy have also found pression in the steadfast improvement of the material cons and the rising cultural level of the population

The steady growth of industry, agriculture, transport, on, etc has led to the fact that every year hundreds of thousands of people are being drawn into the active life of the country. There were 22,000,000 industrial workers and employees in the USSR in 1933, while by 1938 this number had risen to 28,000,000. During the same period the national payroll increased from 34,953,000,000 roubles of 425,000,000 roubles. The average annual earnings of in dustrial workers increased from 1,513 roubles in 1938. The monetary incomes and incomes in kind received by the collective farmers have also shown a marked increase during these years. The best indication of the growth of the country's public wealth is the national income, which has mounted from 43,500,000,000 roubles in 1933. to 105,000.00,000 roubles in 1933.

Material happiness always rests on figures, as the French writer Balzae justly wrote. The figures cited above illustrate the growth of the might, wealth and culture of the first Socialist state in the history of mankind, a country run according to plan.

The private ownership of the means of production has Leen abolished in the Soviet Union. The means of production are the property of the whole people. Hence, every entreprise is operated not with a view to increasing the profits of a private owner, but in the interests of the whole people.

The steady improvement in the standard of living of thworking people creates an unlimited home market. The rentinuous growth of the incomes of the working people enurs a ready market for the ever increasing output of Soviet industry and agriculture.

The abolition of the private ownership of the means of production and the concentration of the administration of the national economy in the hands of the State private the receiving conditions for the harmonious development of all

industries. This excludes the possibility of over production in any branch

Ind finally a factor of stal importance is the moral and political unity of the Source people: the absence of exploitation the deep interest of all the northing people in the detelopment of their country, their branch of industry their luctory or their institution. The direct connection between the growth of the country's public wealth and the material standards of each working man it so obvious that it series at a powerful stimulus for the active participation of the whole people in the admits stration of the country in acordance with a uniform Societive plan.

PART II SOVIET INDUSTRY AND COMMUNICATIONS

## WHO DIRECTS SOVIET INDUSTRY?

RY

#### N SWETANIN

r The Socialist revolution 2 Wealth of the country.

3 Commanders of the industry 4 Promotion to workers. 5. New record. 6 The reward.

The industrial development of the USSR calls for increasing numbers of administrators with a good knowledge of the processes of production and ability to direct them.

During recent years Soviet industry has grown considerably. Its aggregate output is now second only to that of America.

Many new branches of production unknown to Russia in Tearist times, have sprung up in the last ten years. They are the chemical, surcraft automobile, tractor and machine tool industries, to mention only a few.

How was it possible to train the necessary people to administer these thousands of new plants? Where did they come from? What manner of people are they?

1 The Great October Socialist Resolution abolished exploitation in the Soviet Union. The worlers, pecanist and laboring full generally become the masters of all the wealth of the country. Tens of millions of people who before the resolution were unenfrontheed and downtrodden came to take an active and regular part in the administration of the State. Their runks have produced many talented organizers and directors of industry, transport, and agriculture, and many gifted workers in the field of art and culture

The administration of the country and its industry was thrown open to women, who constitute half the population and who in Tsarist times were allowed no share whatever in public life. The resolution has conferred upon women equal rights with men in law and in fact. There is no branch of Government industry or cultural effort in the Soviet Union today in which women do not take an active part.

The numerous people of the USSR who under the Tars languisted in a state of colonial slater; have been emancipated from national oppression and with the assistance of the Russian people have built up their own industry and a new cultural life. These people are also taking an active part in the work of Socialist construction, and their ranks are constantly producing alented leaders.

The rast majority of the directors of Sovjet industry were once rank and file workers. They secured promotion owing to their didities and the unitative they displayed in production. They are people reared in the new Socialist technique they strive to get the very utmost out of the technique and to produce the largest possible quantity of goods of the lest quality for the bewefit of their country.

2. The national income of the Soviet Limon is entirely at the disposal of the working people. Part of it goes for the further economic development of the country, the remaind or to stack the needs of the people. The richer therefore the 1.5-NB grows, and the more its andostry and agriculture produce, the greater becomes the well leng of its entirens and it e higher their standard of Iming. Hence the Soviet cutzen

This record started a regular movement for higher productivity of labor in the shoe factories of the country-Calculation of movement and commy of seconds became the watchword among the shoe workers. Very soon my record was beaten by other workers. I was sincerely pleased with their achievements for it was all for the benefit of my Soviet country and it helped to increase its weath and might

I continued to strue to improve the processes of work, to raise productivity of labor, and thereby I considerably increased my own earnings

5 I soon established a new record—1 820 pairs in one elift

It made me happy to know that our people were receiving more shoes than formerly thanks to my efforts and those of my comrades

Government rewarded my initiative and achievements by granting me the Order of Lenm

Meanwhile I was studying very persistently and improving my technical knowledge

Very soon I was appointed shop foreman and a vest later assistant director of the factory

In 1938 three hundred thousand voters of Lenngrad elected me Member of the Supreme Soviet of the USSR. In May of that year I was appointed director of the Skorokhod fa tory v hose gates I had first entered twenty years earlier a log of theshe

6 Today I have been promoted to the highly responsible of the Assistant People's Commissar of Light Industry of the USSR. There are numberless workers like myself in our country who in a short time have passed from the bench to the management of industry

I could mention dozens of my comrades former rank and file workers in the leather and shoe trade, who have become directors of factories

Take for example Salamanos, a leather worker who in his spare time studied assaldously and acquired a higher technical education. He first became an engineer and then the director of a big leather works

Another example is Zatulovsky, who was also a leather worker. He first qualified as a technician and then as an engineer. He is now the assistant chief of the Leather Industry Board of the USSR

In a like manner people are developing in every branch of industry of the Soviet Union. These people are part of the wealth of the Soviet country. They are a pledge of the rapid growth of its might and power

They fove their country profoundly and are devoted to the service of its industry. They are never tired of studying and improving their proficiency in whatever post their people may promote them to \ V feature that marks them all is their resistent effort to transmit their knowledge experience and discoveries to their compades and to help them in their development and advancement.

The Third Five Year Plan of Economic Development of the USSR (1938 12) envisages a further big advance in influstrial development and in the mechanisation of agriculture. This will demand large numbers of new administrators in the most sarred field.

The system of training and advancement in the Soviet Union is a guarantee that this demand will be fully met.

# THE INDUSTRIAL MIGHT OF THE USSR.

### BY I BARDIN

1 The new base 2 Welles' visit. 3 Revolution in production 4 Heavy industry 5 Oil 6 Chemicals.

Tearst Russia was an economically backward country Her autocratic form of government acted as a brake on the development of her forces of production. This explains her national poverty and economic dependence on the more advanced capitalist countries despite her vast natural resources. To illustrate concretely the low level of her industrial development, stuffice at to state that in 1913 Russia cocupied the 15th place in the world in electric power produc, at too, for place in the output of coal, 3th place in pig iron and steel smelling and 7th place in copper manufacturing. Vlany branches of industry, such as the production of aluminium, nickel, rare metals and synihetic introgen, did not exist at ill. High grade steels, ferious elloys and calcium carbides were almost all imported, as were machine tools and other machinery.

The setback suffered by Russian industry during the war years was catastrophic Beginning with 1915, the output etaadily daminished until in 1920 at had dropped to a bare minimum, and in some cases come to a complete standaull

1 The Soviet Government set up after the triumph of 1 the Great October Socialist Revolution fully realized that the building of Socialism necessitated a strong industrial base, powerful enough to render the country independent, in respect to its technical and economic requirement, of the hostile